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How can Public Works Programmes create Sustainable Employment?

Esther Gehrke
Renate Hartwig

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Esther Gehrke is a researcher in the Department "Sustainable Economic and Social Development" at the German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE).

E-mail: esther.gehrke@die-gdi.de

Renate Hartwig is a researcher at the Chair of Development Economics at the University of Passau.

E-mail: renate.hartwig@uni-passau.de

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On behalf of Federal Ministry for Economic Cooperation and Development

Tulpenfeld 6, 53113 Bonn
☎ +49 (0)228 94927-0
🖷 +49 (0)228 94927-130
E-Mail: die@die-gdi.de
www.die-gdi.de

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Bonn, November 2015

Esther Gehrke
Renate Hartwig

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Abbreviations

BDT	Bangladeshi taka
BGPE	Bavarian Graduate Programme in Economics
BRACE	Building Resilience through Asset Creation
BS	Boliviano
CfW	Cash for Work
CfWTEP	Cash for Work Temporary Employment Project
DIE	Deutsches Institut für Entwicklungspolitik/German Development Institute
DFID	UK Department for International Development
DPW	Department of Public Works
DEGP	100 Day Employment Generation Programme
EC	European Commission
EDPRS	Economic Development and Poverty Reduction Strategy
EGPP	Employment Generation for the Poorest Programme
EPWP	Expanded Public Works Programme
FAO	Food and Agricultural Organisation
FISDL	Fondo de Inversion Social para el Desarrollo Local
FY	Financial year
FISP	Fertilizer Input Subsidy Programme
GDP	Gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoL	Government of Liberia
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HABP	Household Asset Building Programme
IDB	Inter-American Development Bank
IDR	Indonesian rupiah
IFPRI	International Food Policy Research Institute
ILO	International Labour Organisation
INR	Indian rupee
IPC-IG	International Policy Centre for Inclusive Growth
IPEP	Innovations in Public Employment Programme
IZA	Institute for the Study of Labor
KEP	Karnali Employment Programme
KfW	KfW Entwicklungsbank

LACE	Liberia Agency for Community Empowerment
LIWP	Labour-Intensive Works Programme
MASAF	Malawi Social Action Fund
M&E	Monitoring and evaluation
MDTF	Multi-Donor Trust Fund
MENA	Middle East and North Africa
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MWK	Malawian kwacha
MoRD	Ministry of Rural Development (India)
NaCSA	National Commission for Social Action
NBER	National Bureau of Economic Research
NGO	Non-governmental organisation
NPR	Nepalese rupee
OFSP	Other food security programmes
PATI	Programa de Apoyo Temporal al Ingreso
PLANE	Plan National de Empleo de Emergencia
PNPM	Program Nasional Pemberdayaan Mandiri
PSNP	Productive Safety Net Programme
PW	Public works
PWP	Public works programme
RWF	Rwandan franc
SFD	Social Fund for Development
Sida	Swedish International Development Cooperation Agency
TLU	Tropical livestock unit
UDAPE	Unidad de Análisis de Políticas Sociales y Económicas
UNDP	United Nations Development Programme
Unicef	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States dollar
VUP	Vision 2020 Umurenge Programme
WFP	World Food Programme
YEP	Youth Employment Project
YESP	Youth Employment Support Project

Executive summary

Public works (PW) programmes are long-standing development interventions that have grown both increasingly popular and more ambitions in recent years. Originally used as tools for ad-hoc poverty relief in response to economic downturns and natural disasters, they are now used more and more as long-term social protection tools. As a prominent example, India now guarantees minimum employment by law. Other programmes are used to provide formal training opportunities, agricultural inputs or credit.

The popularity of PW programmes is due to their potential 'double dividend': not only do they aim to reduce poverty and foster growth by transferring income directly to the poor, they are also designed to build and improve the infrastructure and/or deliver other public goods and services at the same time.

However, the higher the level of ambition, the more trade-offs there are likely to be. Hence, the question this paper seeks to answer is whether PW programmes are fit to serve multiple objectives and how they should be designed in order to do so. We concentrate on the effects of PW programmes on sustainable employment, which should be a good proxy for their effects on poverty reduction and growth. The term 'sustainable employment' is used here to refer to jobs beyond those generated directly by the programmes themselves, i.e. to employment which is likely to persist after a PW programme has ended.

PW programmes could affect sustainable employment through a variety of channels, four of which are put to the test in this study:

First, PW programmes can lead to sustainable employment by encouraging more productive investments. Participants in PW programmes receive income in exchange for work. This income transfer can affect investment in two ways. First, the additional income enables households to accumulate savings, which can ultimately be used for productive investments. Second, if income transfers are regular and predictable, they could perform an insurance role, thus altering participants' risk management capacity and willingness to take risks. This could also translate into higher productive investments. These additional investments might increase agricultural output, create more business opportunities and thus affect employment.

Second, PW programmes can affect sustainable employment as a result of higher wages. PW programmes can lead to a change in wage levels in the private sector if the wages paid in the PW programme are higher than the market average. If the programme is large enough, beneficiaries shift their labour from the private sector to the PW programme, leading to a substantial reduction in the supply of labour to the private sector. This puts pressure on employers to raise wages. Wage rises in the private sector could induce employers to use labour-saving technologies, thereby stifling private-sector labour demand and hurting workers without access to the PW programme. In markets with a high concentration of power, however, higher wages paid in a PW programme will not necessarily induce technology shifts nor reduce the private-sector demand for labour. Instead, they could lead to higher wages in other sectors and improve the quality of employment.

Third, PW programmes can lead to sustainable employment by developing skills. PW programmes can raise skills levels if they include on-the-job or formal training packages. Training should improve the quality of the labour supply. More skills and better quality labour should then translate into better employability and higher earnings.

Fourth, PW programmes can lead to sustainable employment by boosting economic activity. PW programmes generate and improve public goods and infrastructure. Better infrastructure can increase agricultural output, lower transaction costs and improve market access, thereby raising the profitability of farms and businesses, which should in turn raise labour demand.

The selection of programmes considered in this review stems from the application of the following three criteria:

1. The PW programme is being or was implemented in a developing country.
2. The PW programme provides income support in the form of wages paid in exchange for work and aims to generate and maintain public infrastructure or social services using a labour-intensive approach.
3. The PW programme has been the subject of an assessment by an empirical study.

We identified 16 programmes which satisfy these three selection criteria. These 16 programmes are spread over five major geographic regions.

The review shows that, even though many programmes have been implemented throughout the developing world, very little evidence is available on their impact. The majority of studies focus on their direct effects on consumption, savings and investment. Evidence of their impact in terms of wages, skills and economic activity is much more limited. Given the popularity of these programmes, these are important knowledge gaps that need to be filled.

Despite the limited empirical evidence, a number of conclusions can be drawn regarding the effectiveness and design of PW programmes.

First, the evidence suggests that standard short-term PW programmes are not capable of encouraging productive investments by beneficiaries. The average income transfers resulting from these programmes are too low and too unpredictable to induce beneficiaries to invest more. Programmes which secure repeated benefits over several years and a reliable access to employment over the project cycle – ideally in the form of an employment guarantee – achieve better results. Another way of raising investments is by combining a PW component with complementary services such as credit.

Second, the extent to which PW programmes affect wage levels and employment depends on the wage gap between the PW programme and the local labour market, the scale of the PW programme and local labour market conditions. If PW programmes offer enough employment at wages that are higher than the market average to affect the total demand for labour in the economy, there will be a decline in the supply of labour to the private sector and a concomitant rise in the price of labour. Rises in private-sector wages were found to depend on the number of beneficiaries, the duration of employment and the

extent to which these programmes then reduce underemployment. Larger and longer-term programmes seem to have more marked effects on private-sector wages.

Third, while skills development and training are becoming increasingly popular features of PW programmes, there is little evidence of such components pushing the cost-effectiveness of PW programmes either up or down. Although on-the-job training seems to increase skills levels, we found little evidence that it matches the demand for skills in local labour markets. The evidence also suggests that it is difficult to design appropriate formal training programmes within the realm of PW programmes, inter alia because the duration of training is limited due to the short-term nature of the employment provided under PW schemes.

Fourth, the evidence suggests that infrastructure projects tend to create sustainable employment. Depending on the type of infrastructure created, different groups seem to benefit. We found positive evidence in relation to infrastructure projects designed to boost agricultural output and improve market access, e.g. irrigation and water conservation projects, land development and rehabilitation projects, flood control and road construction projects. Positive effects are found only if there are guarantees that the infrastructure meets a certain minimum quality standard. Community participation can affect the quality and maintenance of the infrastructure. Early evidence from Ethiopia suggests that community participation in project planning can positively affect project maintenance, thus ensuring the sustainability of the productive infrastructure. However, technical support and expertise are necessary in the implementation stage, even in the context of a community-centred approach, and need to be provided to ensure project quality.

The review shows that certain PW activities can benefit both short-term and long-term job creation. These include irrigation and water conservation, land development and rehabilitation, flood control and road construction. Other activities seem neither to have a high labour intensity in the implementation stage nor to benefit job creation in the long term. As the list of projects which serve both goals is limited, it is crucial to acknowledge that there might be only limited demand for such projects. As this demand is satisfied, policy-makers will at some point have to reassess whether PW programmes are still the most cost-effective means of reducing poverty and boosting growth.

Thus, PW works programmes should meet the following requirements in order to promote sustainable employment:

1. In order to promote productive investments, PW programme need to generate sufficient employment in a reliable manner over a long period. The ideal PW programme thus provides a sufficiently large and predictable income transfer spanning a number of years and also acts as a safety net, thus allowing households to access work in the event of shocks.
2. Instead of aiming at skills development, PW programmes should deliver complementary services in the form of credit.
3. Given that the majority of PW participants in rural areas are engaged in subsistence farming and agricultural wage labour, PW programmes should focus on the agricultural lean season when underemployment is relatively high.

4. PW programmes should set wages in such a way to promote that those most in need self-select into the programme. Wages should be set above the market average only if there is evidence of a high concentration of market power among a small number of employers.
5. PW programmes should concentrate on projects with a big impact on employment in the short and long term (thanks to their effects on agricultural output and market access), such as water conservation and irrigation projects, road construction, flood control projects and land development and rehabilitation projects.
6. The local community should be involved in the selection of projects in order to guarantee ownership, use and sustainability of the infrastructure generated. External technical expertise is needed in the implementation stage, however.

As a final point, PW interventions should be accompanied by diagnostic analyses of local labour markets and a more structured form of data collection and evaluation in order to expand the evidence base and foster a more informed policy debate. More evidence is also needed to assess the long-term benefits of the infrastructure and public goods generated by the programmes.

1 Introduction

PW programmes have been spreading rapidly throughout the developing world during the past few years. Prominent examples include the Programa de Jefes y Jefas de Hogar in Argentina (henceforth referred to as 'Jefes y Jefas'), the Productive Safety Net Programme (PSNP) in Ethiopia, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in India, the Vision 2020 Umurenge Programme (VUP) in Rwanda and the Expanded Public Works Programme (EPWP) in South Africa.

Current employment crises such as the high youth unemployment in the Middle East and North Africa (MENA) have also aroused the interest of development policy-makers in PW programmes, as they are able to generate large-scale employment opportunities within a relatively short time. The numbers alone are impressive: 80 million participants in the MGNREGA in India, 10 million in the Program Nasional Pemberdayaan Mandiri (PNPM) in Indonesia, seven million in the PSNP in Ethiopia and two million in the Jefes y Jefas in Argentina.

PW programmes provide employment to poor households and individuals at very low wages. Their labour is typically used for labour-intensive infrastructure projects, which are designed to increase the availability of public goods in the targeted regions. Most programmes therefore follow twin goals. First, they seek to reduce poverty by transferring income to poor households or individuals, typically using below-market wages as their targeting instrument and relying on the differential opportunity costs of the poor and non-poor (Besley & Coate, 1992). Second, they use the labour force to perform infrastructure projects or to generate other types of public goods so as to enhance development in the targeted regions (Alderman & Yemtsov, 2014; Subbarao, del Ninno, Andrews, & Rodríguez-Alas, 2012).

Most programmes have traditionally been used as crisis relief. In other words, they were adopted in response to economic downturns or natural disasters and discontinued when labour market or overall economic conditions improved (Lieuw-Kie-Song, Philip, Tsukamoto, & van Imschoot, 2011). Lately, however, many innovative elements have been introduced into PW programmes with the aim of using them to attain additional goals, e.g. improve the quality of the labour supply by skills development or achieve social protection goals by making these programmes more permanent.

Of course, there is likely to be a trade-off when multiple goals are pursued within one and the same programme. Indeed, there is now a growing debate among both academics and practitioners as to whether PW programmes can achieve different goals concurrently and how they should be designed in order to do so. However, these goals are measured in different units, thus making any judgement as to how a PW programme should ideally be designed a matter of considerable discretion.

One way of resolving this dilemma is by recalling the fact that both employment creation and the production of public goods are not targets in themselves, but rather a means of stimulating growth and reducing poverty (Alderman & Yemtsov, 2014). Similarly, social protection can also contribute to growth and poverty reduction. So can skills development: it ultimately raises the quality of labour as well as participants' income-generating potential, thus also promoting growth in the long run. The question should therefore be

rephrased as: how should PW programmes be designed in order to maximise their effects on growth and poverty reduction?

Two basic difficulties arise when attempting to estimate the effects of PW programmes on growth and poverty reduction:

1. First, it is extremely difficult to attribute poverty outcomes to different mechanisms and design options within a PW programme (Alderman & Yemtsov, 2014).
2. Second, the poverty reduction effects of PW programmes depend *inter alia* on the income forgone by participants, i.e. what they would have earned in the same period without PW? This is hard to measure and hence ignored in most impact evaluations (Alik-Lagrange & Ravallion, 2015).

This paper therefore takes a different approach and concentrates on the employment effects of PW programmes. Focusing on employment as the overarching objective arguably allows a better attribution of outcomes to causal mechanisms and hence a clearer picture of design options, potential trade-offs and complementarities.

PW programmes contribute directly to job creation by providing low-skilled jobs. Their cost-effectiveness in creating short-term employment depends on the administrative costs, the capital-labour ratio of the projects, and the wages paid to programme participants (International Labour Organization, 2012). A number of recent studies have cast serious doubt on the adequacy of short-term employment opportunities as means of reducing poverty. They suggest that the programmes' administrative costs, as well as participants' welfare losses from forgone income, are very high compared with other poverty reduction programmes such as cash transfer schemes. In terms of welfare gains to participants, cash transfer schemes often perform far better from a cost-benefit perspective, particularly when the focus is on short-term income effects (Blattman & Ralston, 2015; Murgai, Ravallion, & van de Walle, 2015; National Audit Office, 2011).

In order to tilt the balance away from cash transfers towards PW programmes, the latter must therefore offer substantial benefits beyond the direct income effects of short-term employment provision. This raises the question of how PW programmes should be designed if the focus is not solely on income transfer, but also on maximising the overall employment effects. This paper therefore concentrates on the effects of PW programmes on sustainable employment, i.e. on employment outcomes beyond those provided under the programme and which could persist after the termination of the programme.

Thus, the main objective of this paper is to understand how PW programmes should be designed and implemented in order to maximise sustainable employment creation. We take the following approach in answering this question: first, we develop a conceptual framework that highlights the different channels through which PW programmes could potentially affect sustainable employment. Second, building on the conceptual framework, we then review 16 existing PW programmes throughout the world.

These programmes have been selected on the basis of three criteria:

1. The programme is being or was operated in a developing country.
2. The programme falls within the definition of a PW programme as used in this study, i.e. it provides income support in the form of wages in exchange for work and seeks to

generate and maintain public infrastructure or social services using a labour-intensive approach.

3. Empirical (quantitative and qualitative) studies assessing the impact of the programme have been published.

The number of programmes reviewed in this paper is limited by the available empirical evidence. For this reason, the number of cases reviewed varies by region and is lower in some regions than in others. This prevents us from drawing any region-specific conclusions, such as the usefulness of PW programmes in the MENA region.

The work underlying this study is closely linked to a complementary paper by Esther Gehrke entitled "Can public works infrastructure affect employment outcomes? Evidence from the NREGS in India".[1] The latter provides more details on and an in-depth discussion of the employment effects of different types of infrastructure projects implemented under the Indian PW programme.

This paper analyses the existing empirical evidence of the direct effect of PW programmes on employment creation, as well as their indirect effects on sustainable employment creation through higher investments, higher wages in the targeted regions, better participant skills and greater economic activity. The key questions are:

- Which causal mechanism triggers employment effects?
- What are the conditions in which these effects are likely to occur?
- How should PW schemes be designed in order to facilitate sustainable employment creation?

Because employment is a multi-faceted phenomenon, we consider both the quantity and the quality of jobs created, and both inputs to aggregate employment, i.e. labour demand and labour supply. Based on our results, we make a number of policy recommendations for achieving sustainable employment through the use of PW programmes and draw attention to the limitations of PW programmes in doing so.

The remainder of this paper is structured as follows. Chapter 2 lists the PW programmes reviewed in the study. Chapter 3 presents the conceptual framework. Chapter 4 analyses the empirical evidence of the employment effects of PW programmes and their underlying causal mechanisms. Chapter 5 discusses the potential trade-off between short-term and long-term employment creation that is inherent to these programmes. Chapter 6 concludes and puts forward a number of policy recommendations.

1 This paper was produced with GIZ funding and is available as a DIE Discussion Paper.

2 PW programmes and programme selection

PW programmes have a long-standing tradition[2] and have become increasingly popular in developing countries in recent years. According to Honorati, Gentilini, Yemtsov, Silva, and O'Keefe (2015), 94 countries around the world operated at least one PW programme in 2014. Regionally, PW programmes are particularly popular in sub-Saharan Africa (see Figure 1).

For the purpose of this review, PW programmes are defined as policies in which income support is given (in the form of wages or in kind) in exchange for work (del Ninno, Subbarao, & Milazzo, 2009). While the PW programmes covered in this review vary in their design and objectives, they are essentially social protection instruments with the dual objective of providing temporary employment and generating or maintaining labour-intensive infrastructure projects or social services. This review concentrates on recent PW programmes in developing countries only.

Due to the limited number of operational schemes offering quantitative evidence of their potential effects, we also reviewed evidence from schemes that are no longer operational but which have in the past featured prominently in the literature on PW programmes, most notably Argentina's Jefes y Jefas and the Plan Nacional de Empleo de Emergencia (PLANE) in Bolivia.

Given the focus on developing countries and on labour-intensive approaches, PW programmes in Eastern Europe and Central Asia have been excluded from the review. PW programmes in Eastern Europe differ considerably from the programmes run in developing countries, in terms of both implementation and the type of employment generated. Latvia's Workplaces with Stipend programme is a good example.[3] The programme subsidises work in private-sector firms, but has created only a very small number of job opportunities. It cannot therefore be considered to be labour-intensive, nor does it focus on infrastructure generation – two aspects which are central to our definition of a PW programme.

By applying the selection criteria outlined above, a total of 16 PW programmes were selected for this study. Figure 1 shows that, the majority of the programmes reviewed are situated in sub-Saharan Africa followed by South Asia and Latin America. PW programmes were particularly popular in Latin America during the economic crises in the 1990s.

Table 1 below summarises the main characteristics of the 16 programmes and their size. The appendices contain more detailed lists of each programme's characteristics.

The PW programmes reviewed can be classified into three broad categories according to their duration and objective:

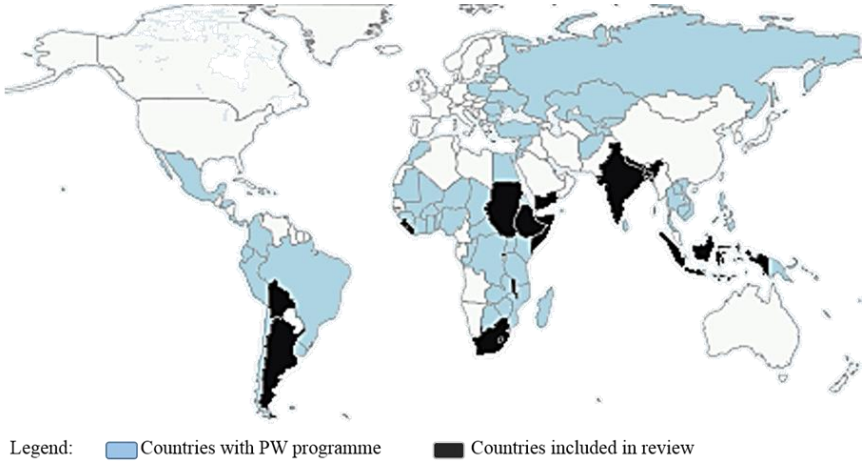
1. programmes providing short-term (crisis) relief;
2. programmes with a medium-term focus as part of a broader social protection and poverty reduction intervention;
3. employment guarantees.

The majority of the programmes reviewed have been implemented on an *ad-hoc* basis in response to economic crises or rising food prices either due to drought shocks or following the 2008 global food price hike. With the exception of the programmes in Latin America, the programmes implemented as short-term crisis relief typically do not provide any

2 The earliest reported PW programme dates back to the 12th century, when the road between Islamabad and Peshawar in present-day Pakistan was built (Subbarao et al, 2012a).

3 See Azam, Ferré, and Ajwad (2013) for details.

Figure 1: Countries operating PW programmes in 2014



	sub-Saharan Africa	East Asia & Pacific	Latin America & Caribbean	Middle East & North Arica	South Asia	Total
Programmes reviewed	8	1	3	1	3	**16**

N.B. This map of countries with PW programmes is not exclusive. Many countries have smaller PW programmes not included in Honorati et al. (2015) or use different names for their PW programmes.

Source: Honorati et al. (2015), elaborated by the authors.

complementary services or components. This could be because such components are difficult to implement on an *ad-hoc* basis. At first glance, the short-term programmes also appear to be less subject to competing objectives, i.e. they just provide a basic income and inject cash into the economy in the short run (Blattman & Ralston, 2015).

Obviously, the results likely to be produced by these programmes vary with the nature and type of programme. The theoretical review (see Chapter 3) suggests, for example, that sustainable employment is more likely to be created by programmes which have a longer-term focus and which affect households' risk management capacity. Similarly, programmes that contain a training component are more likely to develop skills than programmes that generate only short-term job opportunities.

Table 1 also shows that the cost of PW programmes varies considerably from one country to another. Although bigger programmes, i.e. programmes with more beneficiaries, are obviously more expensive, programmes in fragile, post-conflict countries (such as Liberia) are also relatively expensive to run.[4] Fragile, post-conflict countries typically have smaller budgets and their PW programmes are also targeted much more at particular groups, i.e. they are used to bring young people – often low-skilled and disillusioned – back into the labour market in order to lessen the potential for violent outbursts and conflict. Difficult though it may be to quantify the benefits of stability and the social integration of high-risk groups, they could justify the relatively high cost of PW programmes in fragile, post-conflict states.

The programmes reviewed in this study have a clear focus on infrastructure generation and rehabilitation: most of them involve the construction of roads and water and irrigation networks.

4 This raises the question of the cost-effectiveness and suitability of PW programmes in such countries. See Blattman and Ralston (2015) for a review of this topic.

Table 1: Programmes reviewed

PW programme (country)	Objective	Year of implementation (status)	Beneficiaries (as % of population)	Annual cost in USD million (% of GDP)[b]	Training/ complementary interventions	Target population	Activities
Jefes y Jefas (Argentina)	Short-term (crisis) relief	2002 (ended)	2,000,000 [a] (5%)	500 (1.0 %)	Training option	Households with an unemployed head of household	Community social works
EGPP (Bangladesh)	Employment guarantee	2008 (ended)	630,000 (0.4%)	150 (0.1%)	None	Households with a land-holding of less than 0.5 acres and head engaged in casual labour	Road and barrage construction
PLANE (Bolivia)	Short-term (crisis) relief	2001 (ended)	120,000 (1.1%)	18 (0.2%)	None	Jobless aged 25-50	Maintenance of public spaces and roads
PATI (El Salvador)	Short-term (crisis) relief	2009	40,000 (0.6%)	50 (0.1%)	Compulsory training	Vulnerable urban households	Various, from infrastructure rehabilitation to social services
PSNP (Ethiopia)	Medium-term poverty reduction	2005	6,889,910 (10%)	500 (1.0%)	Credit	Chronic food-insecure households	Soil and water conservation
MGNREGA (India)	Employment guarantee	2006	57,801,470 (4.5%)	7,100 (0.4%)	None	Universal	Various, including road construction / rehabilitation, land development and flood control
PNPM (Indonesia)	Medium-term poverty reduction	2007	9,900,000 (3.6%)	550 (0.6%)	Various	Universal	Road construction, water and irrigation systems and electricity access
CfWTEP/YEP (Liberia)	Short-term (crisis) relief	2009; YEP since 2010	17,000 [a] (0.4%)	3 (2.5%)	YEP training component	Vulnerable households	Road maintenance and land clearance
KEP (Nepal)	Employment guarantee	2006	323,600 (1%)	2.5 (1.3%)	None	Households with no employed members	Road rehabilitation and water and irrigation systems

Table 1 (cont.): Programmes reviewed

PW programme (country)	Objective	Year of implementation (status)	Beneficiaries (as % of population)	Annual cost in USD million (% of GDP)[b]	Training/ complementary interventions	Target population	Activities
VUP (Rwanda)	Medium-term poverty reduction	2008	104,000 [a] (6%)	43 (0.5%)	Credit	Poor households with able-bodied members	Various, including road construction / rehabilitation, land conservation and construction of health and education infrastructure
YESP (Sierra Leone)	Short-term (crisis) relief	2010 (ended 2015)	45,993 (0.7%)	25 (0.1%)	None	Individuals aged 15-35 in poor communities	Road rehabilitation, planting and environmental protection
CfW (Somalia)	Short-term (crisis) relief	2011 (ended)	780,000 (7.4%)	25 (2.7%)	None	Universal	Construction of water catchments and rehabilitation of water networks
BRACE (South Sudan)	Medium-term poverty reduction	2012	50,000 [a] (2.5%)	21 (0.1%)	None	Poor households	---
EPWP (South Africa)	Medium-term poverty reduction	2004	350,068 (0.7%)	2,500 (0.7%)	Optional training	Unemployed people	Various, from infrastructure rehabilitation to community social services
LIWP (Yemen)	Short-term (crisis) relief	2005	361,068 (0.6%)	24 (0.8%)	None	Universal	Rehabilitation of land, water and road networks

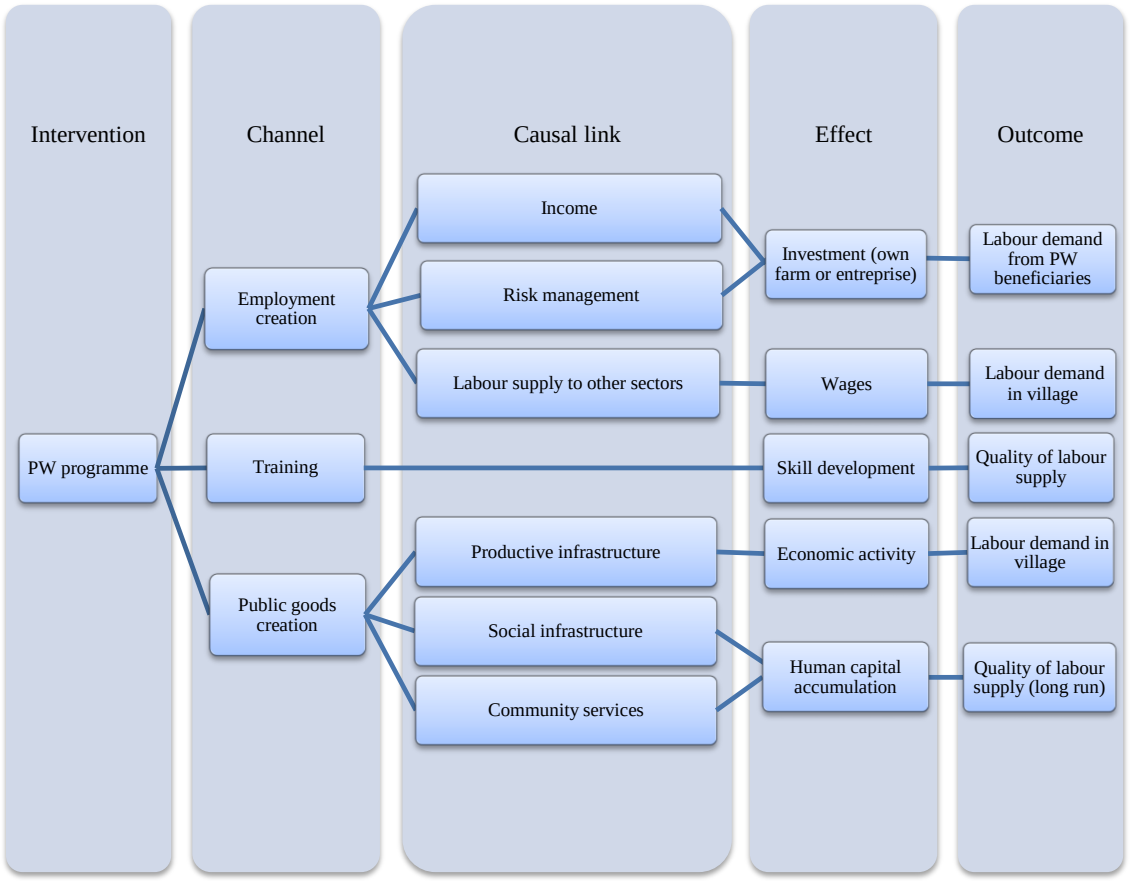
Notes: Beneficiary and budget figures are based on the latest available year.
[a] Number of households benefiting.
[b] Latest available figures (years vary).

Source: Reviewed literature.

3 Conceptual framework

PW programmes could influence employment outcomes through a range of different channels and effects. As a means of organising the empirical analysis, this chapter presents a conceptual framework that highlights the different channels, potential causal links and effects through which employment outcomes could materialise. Employment will always be a function of labour supply and demand. Hence, it is crucial to look at aspects of PW programmes that affect labour supply and demand, as well as the quality and quantity of both. Figure 2 shows the potential effects of PW programmes on employment outcomes.

Figure 2: Potential effects of PW programmes on employment



Source: Authors.

3.1 Productive investments by beneficiaries

The first effect of PW programmes on employment outcomes is an increase in productive investments by beneficiaries, due to their access to or participation in the programme, which could increase demand for labour in that group. Increased productive investments might be triggered through two causal links. First, the increase in the disposable income of households participating in the programme could affect their investment behaviour. Second, the improved risk management capacity of beneficiary or potential beneficiary

households and individuals (due to the availability of the programme) could increase their willingness to undertake productive investments.

By raising the disposable income of beneficiaries, PW programmes can boost productive investments among those households and individuals. Thanks to their higher disposable incomes, participants in PW programmes are able to accumulate savings, and ultimately to use these savings for productive purposes. Several studies have shown that the transfer of cash to households increases their productive investments. Participants in Opportunidades, the Mexican cash transfer programme, were found to invest part of the income received in their own farms or enterprises (Gertler, Martinez, & Rubio-Codina, 2012). Likewise, beneficiaries of the Brazilian Bolsa Familia cash transfer programme were shown to be more likely to start their own business than comparable non-beneficiaries (Lichand, 2010). Blattman, Green, Jamison, Lehmann, and Annan (2015) also showed that cash grants have positive effects on micro-enterprise development in Uganda. Rises in disposable income could also positively influence the willingness to take risks (Andersson, Mekonnen, & Stage, 2011; Bianchi & Bobba, 2013). In the context of PW programmes, the increase in disposable income – and hence additional investments – will be most pronounced for individuals with the lowest amount of forgone income, because they stand to gain the most from participating in PW programmes. These are unemployed or underemployed individuals or else individuals who would earn only low wages (because of a low level of skill) outside the PW programme.

Improving the risk management capacity of both beneficiary and non-beneficiary households could equally lead to higher investments. It is now generally agreed that uninsured risk constrains households in their investment. Evidence shows that risk hinders the adoption of technology (Dercon & Christiaensen, 2011; Karlan, Osei, Osei-Akoto, & Udry, 2014) and on-farm investment (Rosenzweig & Binswanger, 1993), and induces households to adhere to low-risk and low-profit production techniques or occupations (Bianchi & Bobba, 2013; Dercon, 1996; Gehrke, 2014). PW programmes can improve individual risk management by making employment and hence income available in a foreseeable and reliable manner (Barrett, Holden, & Clay, 2004; Binswanger-Mkhize, 2012). The idea is that, when faced with shocks, individuals and households can use the PW programme to generate additional income. If access to the programme is sufficiently reliable, it should enable beneficiaries to reduce buffer-stock savings and increase productive investments instead. This causal link is particularly relevant for households that are highly exposed to covariate shocks such as droughts, floods or large-scale crop diseases. By creating employment opportunities independently of shocks, PW programmes can greatly influence households' ability to earn a regular income even in the event of a shock. Employment guarantee schemes such as the Indian MGNREGA are particularly suited for this because they entitle individuals to access employment when needed and stipulate this access as a right (Lieuw-Kie-Song et al., 2011). However, other well-functioning, long-term PW programmes could have similar effects.

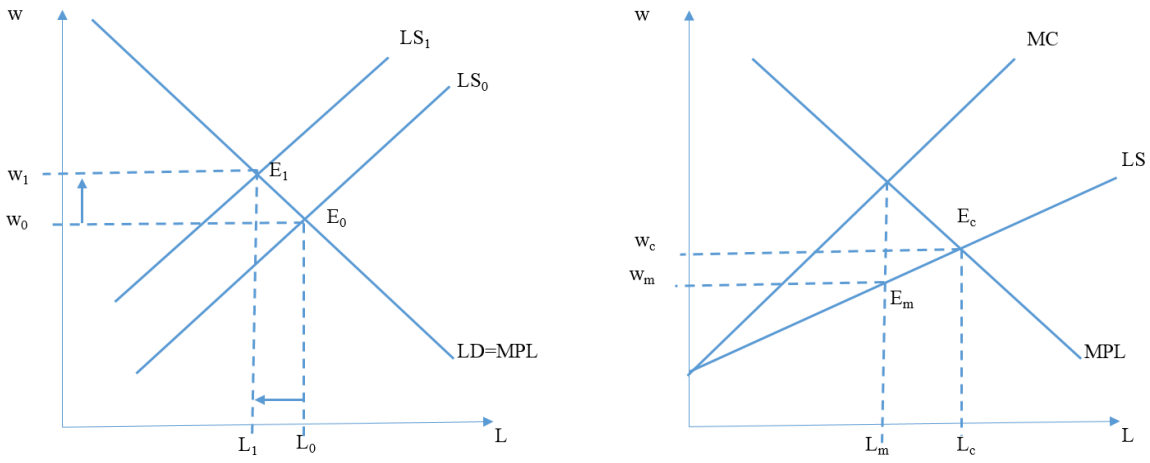
3.2 Wages, working conditions and private-sector labour demand

The second effect through which PW programmes can influence employment outcomes are changes in private-sector wage levels, working conditions and labour demand. Private-sector wage levels change if beneficiaries reallocate their labour supply from other sectors

to the PW programme. This reduces the labour supply, putting pressure on employers to adjust their wages. Similarly, work conditions could change due to the introduction of PW programmes. If PW programmes introduce and consistently monitor decent working conditions, such as by setting standards for decent hours and safety at work, providing childcare facilities at work etc., private-sector employers could be pressured to offer similar working conditions in order to continue to attract workers (International Labour Organization, 2012).

Higher wages and better working conditions could be the intended effects of PW programmes. However, wage increases could also induce employers to use labour-saving technologies and hence reduce private demand for labour and private-sector employment in the targeted areas. The extent to which wage changes affect the private-sector labour demand depends on the structure of the labour market (Basu, Chau, & Kanbur, 2009). In a competitive labour market, equilibrium wages reflect the marginal productivity of workers in each activity. A decline in the supply of labour to a particular sector will increase equilibrium wages and induce changes in production technology towards more capital-intensive production up to the point where the marginal product of labour again equals equilibrium wages (see Figure 3a). In such a world, the observed wage change would be determined entirely by the amount of labour that is reallocated from the private sector to the PW programme, i.e. by the size of the PW programme and the PW wage. There would be a crowding out of private-sector employment in favour of public employment. The crowding-out effects will be greater the less elastic the supply of labour is and the more elastic the demand for labour is.

Figure 3: Competitive and monopsonistic labour markets



Legend: w: wage; L: labour; E: equilibrium; LS: labour supply; LD: labour demand; MPL: marginal product of labour; MC: marginal cost. Subscripts m and c in (b) indicate monopsonistic and competitive markets respectively.
Source: Authors.

However, there is substantial evidence to suggest that labour markets are not perfectly competitive in either developing or developed countries (Bardhan, 1979; Card & Krueger, 1995; Datt, 1996; McCord, 2005). In monopsonistic markets, wage standards set by a PW programme could increase workers' bargaining power. In a monopsonistic labour market, there is just one employer. This employer knows the labour supply function of workers and

sets the level of employment and wages such that the marginal product of labour equals the marginal cost of labour. Since wages are determined only by the number of workers he hires, he can maximise profits by setting a lower wage level and hiring fewer workers than in a setting with perfect competition among employers (see Figure 2b). At this wage level, there will be a positive gap between the marginal revenue of labour and the marginal cost of labour.

In this scenario, a PW scheme could lead to increases in private-sector wages without reducing the private-sector demand for labour. This suggests that welfare gains from a PW programme would be higher in labour markets characterised by monopsonistic structures. At the same time these changes will be associated with smaller or zero changes in production technology, because the marginal product of labour could still be higher than the wages actually paid. This suggests that higher wages in monopsonistic markets might persist even after the PW programme has ended.

3.3 Development of beneficiaries' skills

The third effect through which PW programmes could affect employment outcomes is formal or on-the-job training for enhancing participants' skills. This could raise the quality of the labour supply and boost the employability of beneficiaries, and could also have a positive impact on participants' future earnings as well as the economic development of the targeted regions. Some PW programmes include skills development as part of their design. These include the Jefes y Jefas programme in Argentina, the Programa de Apoyo Temporal al Ingreso (PATI) in El Salvador and the EPWP in South Africa, although they vary in terms of the scope and quality of the training offered (del Ninno, Subbarao, & Milazzo, 2009).

It is difficult to properly link formal training to PW programmes. Formal training usually takes a fair amount of time, which is in conflict with the aim of most PW programmes of providing *ad-hoc* employment to those who need it. Depending on the size of the training component relative to the work component (in terms of the time taken up by each), PW programmes could appeal to different groups, with some joining because of the training component and others because of the work component. If the training component becomes too large, the self-targeting mechanism of PW programmes could fail. Instead of attracting workers who need the income most, the programme would then attract those workers who seek to benefit most from the training, i.e. relatively young workers and maybe even members of higher income groups.

It is also unclear why these aspects should be provided in one and the same programme, unless the training course has a direct bearing on the works being undertaken. But in such cases, the course can only be short term or has to be completed before the works are carried out. A key question then is how to ensure that workers attending the course also subsequently participate in the PW programme. One solution might be to make payments only after they have completed both the course and their participation in the PW programme. However, this might again make the programme unattractive to lower income groups, who would not be able to pre-finance consumption and depend on regular income flows. Alternatively, the course and the PW programme could be delivered as separate sub-projects, each with its own approach to targeting and delivery.

It is reasonable to expect PW programmes to plan skills acquisition as taking place on-the-job, i.e. while participants are carrying out programme tasks. Obviously, the quality of skills acquisition and the external relevance of these skills will depend greatly on the works undertaken and the degree of continuity in individual tasks. Given that PW activities are typically low-skilled and short-term (McCord, 2005), it is probably unrealistic to assume that participation in PW programmes will increase participants' employability and facilitate their re-entry into the private labour market, as has been suggested *inter alia* by Lal, Miller, Lieuw-Kie-Song, and Kostzer (2010). If on-the-job training is incorporated into PW programmes, participants could be expected to acquire skills that are transferable to the private labour market. However, one needs to be aware that effective skills development requires a certain degree of continuity in both the task and employment. Thus, there is a trade-off between the different goals of PW programmes: short-term relief from shocks and longer-term skills transfer.

3.4 Economic activity

The fourth effect is greater economic activity in the targeted regions. The idea is that PW projects are capable of producing infrastructure and assets that will enhance economic activity and hence the demand for labour. PW activities fall into three broad categories:

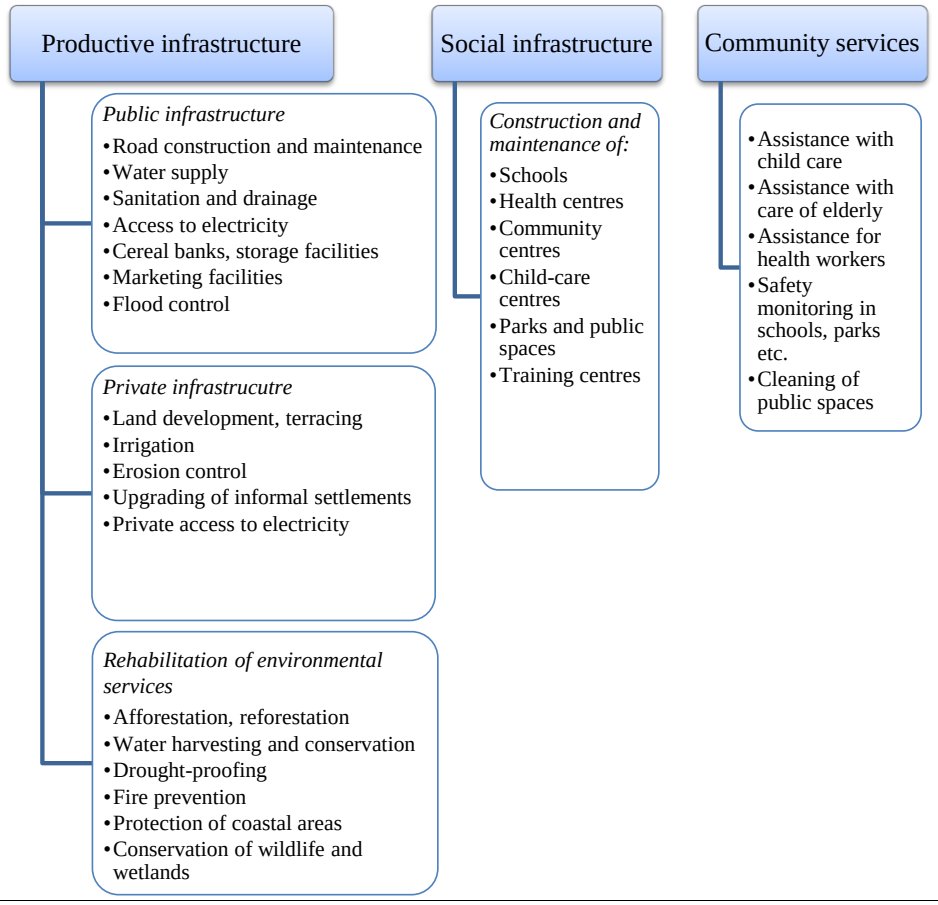
1. productive infrastructure;
2. social infrastructure;
3. community services.

This section discusses the contribution of the first category to economic activity. The two other categories are discussed in the following section. For completeness, Figure 4 shows the activities that typically form part of a PW programme.

Productive infrastructure creation can range from traditional public infrastructure projects, such as road construction, to private infrastructure projects, such as land development, and projects for the rehabilitation of environmental services, such as reforestation, restoration of water bodies, and so forth (Lal et al., 2010; Lieuw-Kie-Song, 2011). A characteristic shared by all these works is that they can directly affect economic activity, e.g. by improving market access and by raising production levels, and hence can raise the quality and quantity of employment in both the short and the long run.

Public infrastructure works should boost employment and enhance the quality of employment by improving market access and raising the profitability of businesses and farms. The bulk of public infrastructure creation is road construction and maintenance. Road construction could affect employment outcomes by reducing the duration and cost of transportation and by improving market access in rural areas. Other public infrastructural works in the category of productive infrastructure are works relating to the water supply, sanitation and drainage works and access to electricity. These can affect employment outcomes by enabling businesses to operate more effectively, increase their output and hire more workers. Finally, agriculture-related public infrastructure such as cereal banks, storage and marketing facilities can affect the profitability of agricultural output and raise employment levels in agriculture. This applies not just to farmers working on their own fields, but also to hired workers.

Figure 4: Typical PW activities



Source: Lal et al. (2010) and ILO (2012).

Ideally, private infrastructural works should raise employment levels and enhance the quality of employment by boosting productivity and improving the profitability of businesses. Private infrastructural works are works involving individual areas or houses that mainly benefit their owners. Since private infrastructure creation mostly targets individuals and maybe their neighbours, these activities do not qualify as public goods. However, the targeting of these works can ensure that they have a pro-poor impact. In other cases, they may target communal lands in order to increase the number of beneficiaries. These activities are typically agriculture-related, involving irrigation or erosion control, for example. They are intended to boost agricultural productivity and hence the demand for agricultural labour, whether family or hired. Other forms of private infrastructure creation are upgrading informal settlements, connecting houses to electricity, and so on (International Labour Organization, 2012). In these cases, the employment effects could be achieved if the works are targeted at businesses, which could in turn raise their production levels thanks to improved electricity access.

The rehabilitation of environmental services can affect employment mainly in agriculture and tourism. Agriculture-related works may include water harvesting, drought-proofing and fire prevention. These affect the agricultural productivity of many farmers in the area and potentially boost the demand for agricultural labour. Other projects may target the rehabilitation of ecosystem services (such as the protection of coastal areas through

mangrove reforestation) or the conservation of wildlife and wetlands (Altenburg et al., 2015; International Labour Organization, 2012). Such works can boost tourism and hence raise employment levels in this sector.

It is less clear whether there are differences in the employments effects of the different types of infrastructure. It is also unclear whether technical aspects of the targeting of such works, the scale and the amount of labour involved and the involvement of technical experts affects economic activity and hence long-term employment outcomes. Generally speaking, one would tend to assume that projects that are carefully planned, closely targeted at the needs of communities and implemented in a technically sound way will also generate the best employment outcomes, but there might be trade-offs.

3.5 Human capital accumulation and multiplier effects

There are two main other effects through which PW programmes could affect employment outcomes in targeted areas. For various reasons, these are not considered in depth in the empirical analysis.

First, other types of PW employment, namely community services and social infrastructure, could lead to greater human capital accumulation and hence enhance the quality of the labour supply, but only in the very long run. Since these aspects cannot be covered in standard impact evaluations, we have excluded this channel from the empirical analysis.

Community services include social services, such as assistance with day-care or other child development projects, which usually aim at improving the quality of existing public services.[5] Such services are included in the EPWP in South Africa, for example. Likewise, child care and child development interventions linked to PW are currently also under discussion and being piloted in the VUP in Rwanda. The challenge with community services is to ensure that the quality of public service delivery is not diminished because skilled public-sector employees are being replaced by unskilled PW participants. For this reason, most community service activities involve auxiliary tasks such as cleaning, repair and maintenance, and cooking. These tasks can often enhance the quality of service provision, but not necessarily the quantity. Given the need for these tasks to be properly supervised and managed, social service works are mostly small-scale and concentrate on areas where public service delivery is already functioning within adequate structures (provided by the government or NGOs).

As with the provision of social services, the maintenance and expansion of the social infrastructure (such as schools, public sanitation and health centres) under PW programmes can lead to higher human capital accumulation and affect employment outcomes in the long run (Lal et al., 2010).[6]

5 Examples of other community services are waste removal, recycling and composting.

6 PW programmes typically concentrate on labour-intensive projects such as road construction, terracing and irrigation. As PW programmes mature, they are tending to focus more and more on the social infrastructure. The Rural PNPM in Indonesia and the VUP in Rwanda are good examples.

Second, the process of increasing income in rural communities could have multiplier effects. Rising levels of income are likely to be accompanied by rising levels of consumption. This could stimulate economic development and employment growth in the targeted areas if production levels are also raised (Lieuw-Kie-Song et al., 2011).

However, there are no guarantees that these multiplier effects will actually materialise in practice. For example, a higher demand for consumer goods may be met by a higher volume of imports into the region (see Alderman & Yemsov, 2014). Moreover, these multiplier effects are not specific to PW programmes nor directly dependent on their design. For this reason, we have decided not to include them in our empirical analysis.

4 Analysis of the empirical evidence and underlying causal mechanisms

PW programmes can affect investment, skills, wages and economic activity in general. Whether these effects actually materialise, however, depends on a number of conditions. These are presented and discussed in the following chapter.

4.1 Productive investments by beneficiaries

A number of impact evaluations of PW programmes have studied their effects on asset accumulation and productive investments. Most of these studies do not attempt to trace the causal mechanism underlying the observed effect, i.e. is an investment the result of higher income and the capacity to accumulate savings or does it stem from the improved risk management capacity of the targeted households? However, the programmes the impact evaluations claim have an effect in terms of savings, asset accumulation and investment vary substantially in the time horizon of participation, the average duration of employment created per year, the size of transfers and their combination with other programmes. This allows us to draw a number of interesting policy conclusions. Table 2 lists the characteristics of the programmes reviewed in this chapter.

A comparative analysis of these programmes raises the following interesting points:

1. Participants' savings rise if the PW programme generates employment over and above existing employment opportunities, e.g. employment during the agricultural lean season.

2. The accumulation of savings can lead to productive investments, but savings are mostly used for consumption smoothing purposes first, such that productive effects may be expected only if participants can access the programme for a number of years.

3. Combinations with other government programmes, such as programmes that improve access to credit, seem very promising, because investments can then be made earlier.

4. Employment guarantees and other PW programmes with sufficiently reliable employment provision are generally more conducive to productive investments, as they also affect households' risk-management capacity.

Table 2: Design characteristics of selected PW programmes

PW programme	Time horizon of participation	Duration of employment created (on average per year)	Wage levels	Combination with other programmes	Outcomes
PSNP (Ethiopia)	Three years and longer	17-62 days	Below market wage	Yes, credit	Investment if participation lasts longer than three years or where combined with credit
MGNREGA (India)	No limit to duration of participation	15-76 days, varies across states	Above market wage	No	Savings; investments (where reliable); entrepreneurial activity
MASAF PWP (Malawi)	One year	12-48 days	Below market wage	Yes, fertiliser subsidy	No effect on fertiliser use
KEP (Nepal)	No limit to duration of participation	10-15 days	Below market wage	No	Savings
VUP (Rwanda)	One year; since 2012, retargeting every two years	42-48 days	Below market wage	Yes, credit	Savings
YESP (Sierra Leone)	No limit to duration of participation	50-75 days	Below market wage	No	Savings, entrepreneurial activity
CfW (Somalia)	One year	Up to three months	Below market wage	No	Savings

Source: Reviewed literature.

In most PW programmes reviewed, participants were able to increase their savings. This effect is observed independently of programme design and implementation. An analysis of the Youth Employment Support Project (YESP) in Sierra Leone showed that households were 16% more likely to participate in informal saving groups and were also more likely to invest in small livestock (Rosas & Sabarwal, 2015). In the case of the VUP, but only at the very beginning of the programme, beneficiaries had quite high savings rates of around 20% (Hartwig, 2014). Similarly, 20% of the beneficiary households of the Karnali Employment Programme (KEP) in Nepal reported using KEP funds to buy animals, land, agricultural tools or mobile phones (Nepal National Planning Commission, 2012). Bhargava (2014) looked at the effects of the MGNREGA in India on technology adoption in agriculture. He found there was a shift towards more capital-intensive production, particularly among small farmers and in relation to low-powered technologies. This effect could have been due to higher savings and capital accumulation among MGNREGA participants.

Savings can be used as buffer-stock to smooth consumption in case of a shock or to increase capital stocks and income from agricultural and self-employed activities. Rises in productive assets, mostly livestock, were observed in most cases after households had access to the PW programmes for several years or where enough jobs were created. If the programme is in place for only a limited amount of time, rises in asset levels are usually short-lived and quickly reversed in the event of shocks. Berhane et al. (2013) showed that the duration of support mattered for asset accumulation in the Ethiopian PSNP, with beneficiaries only showing livestock improvements after five years of programme participation. Andersson et al. (2011) similarly found that the PSNP did not affect livestock accumulation in the short to medium term.

In Rwanda, the most recent quasi-experimental assessment of the VUP showed that the impact of the PW component is limited. Households are positively affected by the programme in the short run, i.e. during the period in which they receive support and show positive effects on livestock holding. These effects are not sustained, however. There was a medium-term increase in livestock holding only among those households that benefited continuously from the programme. Households that benefited from the programme for only one period fell back to their asset levels prior to participation (Hartwig, 2014). What is striking in the VUP is that the observed accumulation of assets is very low, despite participants having access to a relatively large number of days of employment through the programme. But because there is little predictability as to when these work opportunities will become available, there is little real additionality in the transfer.

The evaluation of the Somali Cash for Work (CfW) programme found that wages were invested productively, though the impact was not sustained or widespread (FAO Office of Evaluation, 2013). This is hardly surprising given the short time horizon of participation, i.e. one year.

Combinations with other government programmes, such as programmes that improve access to credit, would appear to be very promising because investments can then be made earlier. Gilligan, Hoddinott, and Taffesse (2009) showed that the PSNP in Ethiopia is effective in increasing borrowings, the use of agricultural technologies (such as fertiliser) and the probability of operating non-farming businesses only where it is combined with other food-security programmes (OFSP). These food-security programmes aim *inter alia* at improving beneficiary households' access to credit. Consequently, the authors found that beneficiary households were more likely to take up credit, but also that the average amount borrowed was considerably higher than among those households that did not benefit from both programmes. What cannot be assessed is whether this is mainly a demand-driven or a supply-driven effect. In other words, does the OFSP facilitate higher amounts of borrowing or are PSNP participants willing to borrow higher amounts?

Hoddinott, Berhane, Gilligan, Kumar, and Seyoum Taffesse (2012) produced similar evidence. They found that transfers through the PSNP were not sufficient to increase productive investments. Only in combination with credit did households increase their investments in fertiliser. This complementarity also seems to hold the other way around: OFSP beneficiaries were not more likely to invest more in agricultural technologies nor to produce higher yields unless they also benefited from the PSNP.

In Malawi, by contrast, where the PW programme was combined with fertiliser subsidies, beneficiaries were not found to make greater use of fertilisers (Beegle, Galasso, &

Goldberg, 2014). This could be due to the fact that the programme reassesses eligibility on an annual basis and therefore offers little income predictability beyond the current season.

A greater willingness to incur risk in own production and to shift savings to productive purposes can also be observed when PW programmes generate reliable a sufficient quantity of employment over a longer term. Zimmermann (2014) found some evidence that households with access to the MGNREGA were more likely to engage in entrepreneurial activities, which she deemed riskier than wage employment. She concluded that the MGNREGA functions mainly as an insurance tool by helping households cope with agricultural shocks and by encouraging them to take up risky but remunerative self-employed activities.

Similar evidence was found in relation to the YESP in Sierra Leone, where beneficiary households were four times more likely to set up a new enterprise compared with control households (Rosas & Sabarwal, 2015).

Lastly, Gehrke (2014) analysed the effects of the MGNREGA in India on households' agricultural output choices, finding that households with access to the MGNREGA were more likely to plant riskier and more lucrative crops. She performed a number of robustness checks to make sure this effect could be attributed to the MGNREGA's insurance function and concluded that the programme could produce substantial rises in agricultural productivity through this mechanism.

What the analysis makes clear is that productive investments are hard to undertake from the accumulation of savings alone and that there are important complementarities in combining PW programmes with the access to credit. Even if the wages are relatively low, as long as employment is being provided in a predictable manner, PW programmes will facilitate the repayment of loans, make participants more willing to take up credit and – if the transfer is sufficiently reliable – also increase the probability of obtaining loans from private credit institutions. Where a minimum level of employment cannot be maintained, there is no reason to expect an improvement in participants' creditworthiness.

Alternatively, programmes need to be sufficiently reliable in terms of the amount and timing of employment in order to foster productive investments. Long-term planning is crucial to this end. If employment opportunities are offered on an *ad-hoc* basis and there are no guarantees as to their duration, households will not be able to plan and adjust their investment behaviour. The most successful programmes were those that selected participants for longer periods (e.g. a minimum of three years) or had no limits to participation. Employment guarantees seem particularly promising in this regard, but (as we have seen) are not a necessary condition. Most programmes include a selection procedure, so this can be used to increase the predictability of employment opportunities and make the programme available for several years.

4.2 Wage effects

Very few impact evaluation studies have looked at the effect of PW programmes on wages and the demand for labour. The majority of the studies draw on the Indian experience (see Table 3 for a summary of programmes and evidence). Although the studies concentrate on changes in wages, they do not include any further exploration of the potential substitution

effects in production technologies. Hence, we have no empirical evidence to address the questions of whether and how PW programmes and the associated changes in wage levels promote the adoption of labour-saving technologies in the private sector and thus reduce the demand for labour.

Furthermore, the conceptual framework assumes that the introduction of PW programmes could also have positive effects on working conditions and decent employment. For example, the introduction of health and safety regulations or the provision of childcare facilities at work sites in PW programmes might put pressure on private-sector employers to offer similar working conditions in order to continue to attract workers (International Labour Organization, 2012). While a number of PW programmes have guidelines on health and safety and also provide childcare facilities at work sites – as in the case of the EPWP in South African and the VUP in Rwanda – there is so far no evidence to what extent these programmes comply with the works standards nor of whether these standards have spill-over effects in the private sector. Nevertheless, programmes for which impact evaluations are available vary with respect to wage levels, duration and labour market structures and provide a number of interesting insights for policy-makers.

Table 3: PW programmes and wage effects

PW programme	Wage-setting and level	Duration	Beneficiaries (% of pop.)	Outcomes
MGNREGA (India)	PW wage set at state minimum wage; above observed market wage	15-76 days, varies across states	57,801,470 (4.5%)	Rise in casual agricultural wage; decline in private employment but overall positive welfare gain through wage effect
CfWTEP (Liberia)	PW above market wage for unskilled work	40 days	17,000 (0.4%)	No increase in local wage rates or decline in private employment
LIWP (Yemen)	PW wage intended to be below market wage for unskilled work, but actually above market wage due to crisis	50 days	361,068 (0.6%)	Increase in average wages; reduction in private employment

Source: Reviewed literature.

The empirical evidence suggests that, if PW wages are set above the market wage, PW programmes can reduce the supply of labour to the private sector. The extent to which this affects private-sector wage levels and employment depends on two factors:

1. local labour market conditions;
2. the size of the PW programme, i.e. the number of beneficiaries as well as the duration of employment provided and the extent to which the programme reduces under-employment.

Where PW programmes set wages above the market wage, the price of labour will tend to rise. Whether this happens in practice depends on labour-market conditions, such as labour demand and labour supply elasticities. Quasi-experimental studies that explore the sequenced introduction of the MGNREGA in India have found that the programme leads to a rise of about 5% in casual agricultural wages (Berg, Bhattacharyya, Rajasekhar, & Manjula, 2014; Imbert & Papp, 2015). Imbert and Papp (2015) showed that the increase in agricultural wages is due to a reduction in the supply of labour to the private sector, i.e. the MGNREGA crowds out wage work and self-employment. This suggests that labour markets in rural India are competitive, such that reduced labour supply to the private sector increases wages.

The authors also showed that the demand for labour in rural India is fairly inelastic, so that workers experience welfare gains from the introduction of the MGNREGA. Berg et al. (2014) also argued that labour markets in India are segregated, i.e. they found that the MGNREGA only affected low-wage sectors, and left the wages for skilled work unaffected.[7] In line with the findings of Imbert and Papp (2015) and Berg et al. (2014), Christian, Janvry, Egel, and Sadoulet (2013) also found evidence of an increase in private-sector wages following the introduction of the LIWP in Yemen. In Yemen, as in India, the wages paid in the PW programme were higher than the market wage. Christian et al. (2013) argued that above-market wages in the programme led to an increase in average wages and shifted the workforce away from work in the lowest paid sector.

Above-market PW wages can also leave local wage rates unaffected if underemployment is high and the size of the programme limited. In contrast to the effects in India and Yemen, no wage increases were observed in the CfWTEP in Liberia, despite the programme paying an above-market wage. Wodon (2012) attributed this to the high labour surplus in Liberia and the limited size of the programme. The results of the evaluation survey suggest that 76% of participants were either not active or unemployed prior to the programme. Moreover, the programme provides only a one-off opportunity to participants. Those who have previously participated are not eligible to participate again if a second project is implemented in their community. One-off employment also means that the income transfer is limited. Since the programme only provides a one-off employment opportunity for a short period of time, participants have little bargaining power and thus cannot really exercise upward pressure on overall wage levels.

Even though none of the studies calculated the degree of underemployment, the PW programmes in India and Yemen do indeed have a larger number of beneficiaries (4.5% in the case of the MGNREGA and 0.6% in the case of the LIWP) and a slightly larger number of working days than the CfWTEP in Liberia. Hence, these programmes are indeed more likely to put upward pressure on private-sector wages.

The empirical evidence suggests that only relatively large PW programmes may be expected to have positive wage effects, i.e. programmes which absorb a large number of beneficiaries over a reasonable amount of time. In contexts where underemployment is already low, smaller programmes might also cause private-sector wage increases.

7 Zimmermann (2014) also looked at labour market outcomes and found that the MGNREGA did not affect employment and private-sector wages. However, her study suffers from low precision in the estimated effects due to identification issues.

4.3 The effect of skills development in PW programmes on the quality of the labour supply

Thus far, impact evaluation studies of PW programmes have focused mainly on the direct effects on income or investment, and have not taken account of effects that may arise from the acquisition of skills. Also, PW programmes with a specific training component in their core design still remain scarce. Hence, there is so far little systematic evidence of the effect of skills development in PW programmes on the quality of labour supply and longer-term employability (Hagen-Zanker, McCord, Holmes, Booker, & Molinari, 2011; Subbarao et al., 2012). For this reasons, the conclusions to be drawn for this channel are also limited. Yet there is some indicative evidence about the opportunities for and limitations of on-the job training vis-à-vis more structured training modules in the programme design. The programmes reviewed vary particularly in the duration, topics and complementary support provided as part of training. This leads to a number of suggestions for policy design. Table 4 summarises the evidence and programme characteristics.

Table 4: PW programmes, training, skills development and application and employment

PW programme	Training modality	Average duration of training	Topics covered and complementary support	Outcomes
Jefes y Jefas (Argentina)	Optional training course	4-6 hours/week	---	No effect on improved employability
PATI (El Salvador)	Compulsory training course	80 hours/6 months	Technical skills, business skills and targeted employment support (e.g. job interview preparation, job counselling and search assistance)	Positive effect on job readiness and willingness to start own business
PSNP (Ethiopia)	On-the-job training	---	---	Increased knowledge
CfWTEP/YEP (Liberia)	Compulsory training course	Variable	Technical skills, internships and employment search support	Positive effect on employment (paid & self-employment)
EPWP (South Africa)	Compulsory training course	Two days per month worked (average duration of employment: three months)	Various, including HIV/AIDS awareness, health and safety, vocational skills, life skills, business skills, co-operatives training	No improvement in unemployment
LIPW (Yemen)	On-the-job training	---	---	Increased knowledge

Source: Reviewed literature.

A review of the empirical literature on training and skill development through PW raises a number of points:

1. Although on-the-job training can improve participant knowledge, its effect on employability depends on the demand for the relevant skills in the local labour market.
2. Identifying appropriate and relevant training content seems to be key, even in formal training. Formal training with a focus on technical skills and programmes which provide complementary assistance with job searches are more likely to promote employability than training programmes covering a multitude of topics.
3. Formal training components need a minimum amount of contact time for skills to develop, i.e. skills development is more likely to occur with longer periods of participation.
4. From a cost-benefit perspective, there is little reason for including a formal training component in a PW programme. Studies of technical, vocational or business skills training programmes outside of PW programmes show that such programmes are very expensive and have few effects.

Studies provide indicative evidence that on-the-job training can improve participants' knowledge levels. However, the extent to which this knowledge translates into improved employability depends on the demand for these skills in the economy. In the case of the PSNP in Ethiopia, Lieuw-Kie-Song (2011) documented that 55% of the beneficiaries received training on soil and water conservation technologies as part of their work assignment. 85% of the beneficiaries subsequently applied the skills they had acquired to their own land. While the study did not provide any further assessments, improved water and soil conservation could in turn have a positive effect on agricultural investment and productivity. Indeed, in the same context, Andersson et al. (2011), argued that participants acquiring skills in forestry are one potential explanation for the positive effect of the PSNP on tree holdings.

In Yemen, participants in the LIPW also mentioned in focus group discussions that they became more skilled in construction and masonry as a result of taking part in the programme. The transfer of skills from skilled to unskilled workers in the programme is facilitated by participants working in small groups (of up to 10 people) with a skilled supervisor. Due to the limited job opportunities in construction in the local private labour market, the direct employment effects of this are, however, limited (Lieuw-Kie-Song, 2014).

Programmes which include formal training as a core component should focus on transferring specific technical skills rather than cover a multitude of topics. Providing complementary assistance with job searches also seems a promising element. The PATI programme in El Salvador offers targeted training in specific professions, e.g. training for car mechanics, electricians, tailors, bakers, chefs and florists. It also includes labour intermediation. Thus, in addition to technical skills, the programme also provides training with job interviews, writing résumés, as well as job counselling and search assistance. A recent evaluation by the World Bank (2014) showed that participants' self-employment opportunities improved as a result of the programme.

By contrast, South Africa's EPWP programme provides training in a wide range of topics including HIV/AIDS awareness, health and safety, social entrepreneurship, industrial relations, vocational skills, life skills, entrepreneurship, project management, community

development and co-operatives training. An early review by McCord (2005) concluded that the training provided under the EPWP is unlikely to improve skills and reduce unemployment, because of the limited demand for low-skilled and unskilled labour in South Africa and because the training offered is inadequate. Moreover, with a mean duration of 3 to 4 months' employment, McCord reckoned that there was not enough time for a skills transfer. Thus, the EPWP is likely to be ineffective in raising participants' skill levels to meet labour market demands. Evidence from the mid-term review of the EPWP reflects this concern. The mid-term review shows that the majority of EPWP beneficiaries continue to be employed in EPWP projects after their initial participation instead of moving across to the private labour market.[8]

Effects similar to the EPWP were also found in the Jefes y Jefas programme in Argentina. While Jefes y Jefas creates a multitude of training opportunities, participation is optional. Studies assessing the employability of Jefes y Jefas participants found only limited evidence of their re-entering the private labour market in the short run (Iturriza, Bedi, & Sparrow, 2011).

The evidence also suggests that formal training components need a minimum amount of contact time in order for participants to acquire skills. Unlike the EPWP, the PATI in El Salvador conditions income support on attendance of training activities and thus aims to address income vulnerability and longer-term employability with one integrated instrument. The duration of training is limited to the duration of programme participation (i.e. six months), subject to a minimum of 10 days. The duration of training is thus slightly longer than the average duration of training under the EPWP. With respect to employability, preliminary impact evaluation evidence shows that the PATI does have potential positive effects on employability by improving job readiness and willingness to start a business (World Bank, 2014). However, the study could not say to what extent this could be attributed to training vis-à-vis income transfer.

Like the PATI, the Youth Employment Project (YEP) component of the PW programme in Liberia is targeted at young people only, in terms of training and skills development. Early evidence shows that training has had a positive effect, in that 64% of participants who have been trained since 2010 are now in either paid employment or self-employment (World Bank, 2015).

The evidence from skills development courses outside PW programmes casts their value into doubt. Technical, vocational and business skills training courses have become increasingly popular in recent years. However, empirical assessments of these programmes show that most of them have not increased employability (see e.g. Blattman and Ralston, 2015). Furthermore, the dropout rates tend to be high, particularly among the poor. Most programmes are so expensive that the costs outweigh the benefits. Blattman and Ralston (2015) estimated that the average programme cost lies between USD 1,000 to 2,000 per person. This calls into question

8 Although the EPWP also subsidises work opportunities in private and not-for-profit organisations, these account for less than 3% of all work opportunities and are typically filled by better educated participants. Despite the subsidies, they have still not led to permanent employment in the private sector (Government of South Africa, 2010). This suggests that, even if there was stronger private-sector involvement or if private-sector employment was subsidised under a PW programme, the programme would not necessarily promote a transition to private-sector employment in the long run.

the cost-effectiveness of including formal training components in PW programmes. Unfortunately, there is no detailed information available on the cost of training activities in PW programmes, which means that this concern cannot be evaluated conclusively.

In order to increase skills development and employability, training components in PW programmes need to be carefully designed and meet the demand for skill in local labour markets. This is regardless of whether the focus is on on-the-job or formal training. The contents and duration of training courses are important aspects here. Broadly speaking, technical skills development programmes are more promising than basic 'life skills' training packages. Diagnostic studies to measure the potential skill gaps are also imperative: prior to the design of any training activities, a detailed analysis should be made of the skills level and skills gap for private sector employment. This analysis should take account of local markets, local purchasing power and the resultant potential for self-employment in local areas as off-farm self-employment is likely to be successful only if there is sufficient demand and purchasing power in local areas.

At the same time, PW programmes incorporating specific training components require more institutional capacity. Building skills development components into PW programmes might therefore reduce the cost-effectiveness of such schemes. Furthermore, the training components might also provide incentives for better-off households to participate in PW programmes and thus undermine the self-targeting mechanism that is central to many programmes.

4.4 Increased economic activity

This section describes the conditions in which a productive infrastructure can have positive long-term benefits. There is still scant evaluation evidence of the impact of PW programmes on employment in the form of the creation of public goods and increases in economic activity. However, more and more PW programme evaluations now include an assessment of the contribution of public infrastructure works, which suggests that this is an area where more evidence should become available in the future.

Our conceptual framework suggests that the creation of productive infrastructure may have different effects depending on the type of infrastructure generated, i.e. public vs. private infrastructure. Very little evidence has been produced to date on the extent to which the rehabilitation of environmental services affects employability in agriculture and tourism. In the case of mangrove reforestation activities in the Philippines, for example, no effects could be found (Altenburg et al., 2015).[9] Most of the available empirical evidence relates to the creation of productive infrastructure in agriculture, with the majority of studies assessing the effects on agricultural productivity or on time savings. Although these could conceivably affect the supply of and demand for labour, with the exception of Gehrke (2015), this link has not yet been explored in detail. Impact evaluation studies assessing the longer term effects of the generation of productive infrastructure are summarised in Table 5.

9 The authors argued, however, that asset-protecting PW programmes might be more effective in maintaining environmental services, such as the closed season for commercial fisheries in Balayan Bay, Philippines. During the closed season, fishermen have access to public works in order to prevent them from bypassing the ban on fishing. The closed season is intended to protect the fish population in the bay, and could in turn support tourism in the region.

Table 5: PW programmes and the impact of productive infrastructure

PW programme	Type of infrastructure generated	Project selection	Outcomes
PSNP (Ethiopia)	Various, particularly water and soil conservation	Community level	Positive effect of community participation on project maintenance; negative effect on project implementation
MGNREGA (India)	Various, including land improvements, irrigation, water body conservation, roads and maintenance	Government and community depending on state	Heterogeneous effects by type of infrastructure generated; community participation was not found to have had any effect
PNPM (Indonesia)	Various, particularly roads and irrigation	Community level	50% increase in production of unhulled rice
KEP (Nepal)	Various, including road maintenance, land rehabilitation and water and soil conservation	Community level	Positive effect on travelling time
LIWP (Yemen)	Focus on water conservation but also covers road improvements and terrace reconstruction	Community level	Positive effect on water access and shortage

Source: Reviewed literature.

Though limited, the existing evidence provides a number of interesting insights into the potential effect of the infrastructure generated by PW programmes:

1. It suggests that positive effects on employment are likely to be produced by infrastructure projects designed to raise agricultural output and enhance market access, e.g. in form of irrigation and water systems, soil rehabilitation and road construction, rather than projects involving drainage works and the construction of public infrastructure.
2. Different infrastructure projects are likely to benefit different groups.
3. Positive effects are likely to arise only if there are guarantees that the developed infrastructure meets a minimum standard of quality.
4. Community participation can affect the quality of infrastructure generated.

Infrastructure projects such as irrigation and road construction with a direct link to agricultural output and market access have been found to have consistently positive economic effects, suggesting that they might have equally positive effects on employment. A better infrastructure can lead to better market access, remove time constraints and directly affect agricultural productivity. The Rural PNPM in Indonesia, for example, has produced evidence of the effects of irrigation works. Another example is a study in West Java, which showed that the construction of irrigation channels prompted farmers to plant

two or three rice crops a year because water was now available during the dry season. This resulted in a 50% increase in the output of unhulled rice (World Bank, 2012).

Further evidence of positive effects was also reported from the KEP in Nepal, where 80% of the beneficiaries interviewed said that they benefited directly from the construction of roads. They claiming an average time saving of 0.7 days per week thanks to improved transportation (Nepal National Planning Commission, 2012).

Positive though they are, these findings should be taken with a pinch of salt, as they are based mainly on perception-based information from beneficiary interviews and are hence probably somewhat overestimated. Expert assessments of the infrastructure might be somewhat more conservative, as Shuka (2012) has suggested.

Not all infrastructure projects benefit the population to the same extent; some produce both winners and losers. Christian et al. (2013) gave an assessment of the impact of the LIWP infrastructure in Yemen, showing that, in villages with poor access to water, the LIWP intervention reduced the average length of the trip to fetch water during the rainy season by 9 to 18 minutes. In addition, the improved access to water resulted in 1-2 fewer months of water shortage per year (a 50% decrease relative to the average 3-4 month duration of water shortage).[10] Such projects are likely to benefit most residents to a similar extent.

By contrast, a recent evaluation by Gehrke (2015) showed that, while PW-generated infrastructure can positively affect outcomes in targeted villages in India, there is significant heterogeneity in terms of who benefits from which type of infrastructure. The study showed, for example, that land owners benefited particularly from infrastructure generated with respect to land development, irrigation and water conservation. Households, who benefited from such infrastructure on their own land or close to their land, were shown to cultivate more land, produce more agricultural output, make greater use of agricultural inputs and allocate more time to their own agricultural output.

On the other hand, improvements in irrigation appear to reduce casual agricultural employment, possibly because of manual irrigation being replaced by mechanical irrigation. Infrastructure related to flood control seems to benefit the rural landless population engaged in agricultural casual work, increasing their mobility and thus their employment opportunities.

Different effects for different groups have also been documented in relation to the CfW in Somalia, for example, where the generated infrastructure, particularly wells, also caused conflicts between farmers and shepherds, e.g. pastoralist groups (FAO Office of Evaluation, 2013).

The usability and sustainability of the public good generated is key to the long-term productive effects. Evidence from the MGNREGA in India shows that 99% of rural households in Rajasthan, 82% in Madhya Pradesh and 64% in Andhra Pradesh are using

10 Road projects should also have a positive effect on travelling times. However, not all projects had been completed in Yemen at the time when the survey was held. A conclusive assessment is still pending.

the assets created with the aid of MGNREGA works, with 83% in Rajasthan, 80% in Madhya Pradesh and 67% in Andhra Pradesh considered to be of good or very good quality (Ministry of Rural Development, India [MoRD], 2012).

While the infrastructure improvements produced by the VUP in Rwanda are also generally perceived to be positive, more detailed information from an inventory of public assets generated shows that 20% of all the infrastructure created since the start of the programme is either no longer existent or not in use (Hartwig, 2014). In particular, buildings (such as health centres and schools) and roads have been reported to have been either damaged or washed away by heavy rains and landslides.

The degree of community involvement in project management and implementation can have a differential effect on the long-term benefits of the public goods generated. A detailed assessment of the role of community involvement in the quality of public infrastructure projects in Ethiopia showed that the timing and degree of community involvement can have significant effects (Shuka, 2012). Based on primary data from a sample of 118 soil and water conservation projects in Ethiopia, Shuka (2012) showed that the degree of community participation affects the quality and maintenance of these assets. The figures show that community participation in project planning has a positive effect on project maintenance. However, increased community participation in implementation, including involvement in technical decisions, has a significant negative effect on project quality as measured by a project's operational state. This could be due to a lack of technical knowledge within the community, which could impair the quality of the infrastructure.

In India, where the quality of the infrastructure created is fairly high (MoRD, 2012), the degree of community involvement seems to matter less. Gehrke (2015) did not find that community participation in project selection had any differential impact on employment levels in the implementing villages.

The available evidence shows that the PW-generated infrastructure can have positive effects on employment, particularly by freeing up time for productive activities, by improving access to markets and by enhancing agricultural output. Different groups are likely to benefit from PW projects to varying degrees. These differences in outcomes need to be taken into account when choosing PW projects, as they can have different distributional effects and can thus boost or inhibit sustainable employment for certain groups at the expense of others. Likewise, the role of community involvement in project selection needs careful consideration. Community involvement during the project selection stage can increase community ownership and thus improve the long-term maintenance of the public infrastructure generated. However, a direct involvement during the implementation stage, where advanced technical knowledge is required, may have negative implications for project quality and thus also reduce the potential long-term employment effects emanating from the infrastructure in question.

5 A trade-off between short-term and long-term employment creation?

PW programmes can have differential effects on economic activity and labour demand in the both short and the long term. The short-term effects are associated with the work endowment of the infrastructure project selected and the resultant cash injection into the local economy through the payment of wages. Projects with a higher labour intensity hence result in bigger direct cash injections.

The long-term benefits stem from the four channels identified in the previous chapter. While the conclusions that can be drawn from the first three channels, i.e. investment, wages and skills, are fairly general, we found that the selection of productive infrastructure projects influences the long-term employment outcomes. Given that these infrastructure projects generally also have different labour intensities, the question arises as to whether there might be a trade-off between the short and long-term employment effects in project selection. For example, infrastructure projects with a high labour intensity might create employment in the short run, without contributing to employment creation in the long run.

Identifying a potential trade-off is challenging, due to the lack of empirical evidence of both short-term and long-term employment outcomes. Overall evidence of the direct employment effects of PW programmes is rare. Where there is evidence, information is not available on the type of PW activities implemented under the programmes in question. In the case of the Jefes y Jefas in Argentina, for example, Galasso and Ravallion (2004) estimated that the programme contributed to a 2.5 percentage-point reduction in unemployment in the immediate aftermath of the peso crisis. The PNPM, a community-based programme which has been operational in Indonesia since the 1990s, is estimated to have reduced unemployment by 1.5% (Secretariat of the National Team for the Acceleration of Poverty Reduction, 2014). However, neither the studies nor any available documentation on these two programmes contain information on the type of infrastructure projects that have been implemented and their potential contribution to long-run employment creation.

Against this background, this chapter looks at the trade-off in more detail by bringing together the findings summarised in section 4.4 with more detailed evidence on the labour intensity of different projects. We use administrative data to this end, taking the MGNREGA in India and the VUP in Rwanda as case studies (Tables 6 and 7). Based on these two examples, our conclusion is that there could indeed be projects that have a high labour intensity in implementation and beneficial long-term employment effects, whereas other projects seem to create neither short-term nor long-term employment.

Examples of projects that benefit both short-term and long-term employment creation are irrigation works, road construction, as well as land development and rehabilitation. Land terracing might also be a good candidate for a project with a high labour intensity in project implementation and substantial long-term employment effects, but no empirical evidence is currently available on this. Projects that would appear to benefit short-term employment creation but for which no evidence is available on the longer term effects are flood control, water conservation and reforestation projects. Some projects seem neither to benefit long-term employment creation nor to involve a high labour intensity in their implementation: the construction and maintenance of public buildings and drainage works are examples of these.

Table 6: Employment intensity of the infrastructure generated under the MGNREGA

	Total person-days	Expenditure (disbursed + pending, in millions of INR)	Wages as % of total costs	Share of total spending (%)
Flood control	101,140,298	17,717	65	5.05
Drought-proofing	124,535,945	21,873	65	6.23
Water conservation	523,085,904	72,456	82	20.64
Renovation of traditional water bodies	250,948,306	31,300	91	8.92
Micro-irrigation works	161,849,884	22,069	83	6.29
Provision of irrigation	104,542,018	16,483	72	4.70
Land development	201,639,245	26,803	85	7.64
Rural connectivity	670,731,667	123,036	62	35.05
Rural sanitation	113,802	100	13	0.03
Bharat Nirman Rajeev[11]	12,072,754	10,726	13	3.06
Other	37,515,961	8,440	50	2.40
All works	2,188,176,667	351,000	71	100.00

Source: MGNREGA administrative records, available online at www.nrega.nic.in.

The MGNREGA in India would appear to involve a trade-off with regard to project selection, although we identified a number of examples of positive effects on both short-term and long-term employment creation. In the 2011-12 financial year, works related to road construction (rural connectivity) and water conservation made up the majority of MGNREGA activities. These two activities represent 35% and 21% respectively of total project spending under the programme.

In her assessment of the long-term employment effects of different infrastructure projects in the MGNREGA, Gehrke (2015) found that the overall employment effects were the greatest when the infrastructure was targeted towards land development. Land development is a very labour-intensive activity, with an average labour ratio of 85%, suggesting that this activity could maximise both short-term and long-term employment.

Other PW projects which had positive employment effects for certain population groups at least were flood control works for the landless and water conservation works for land owners. While water conservation works have a very high labour intensity (82%), flood control activities range close to the average in terms of labour intensity (65%), suggesting that they might form a good compromise in terms of short-term and long-term employment

11 Building and maintenance of basic rural infrastructure (various types, including ponds, roads, electrification etc.).

effects. Allocating a larger share of funds to the construction of drainage works as well as to building and maintenance works, by contrast, seems to have an adverse effect on long-term employment. These activities are also characterised by a very low labour ratio (13%; see Table 6), suggesting that they benefit neither short-term nor long-term employment.

Table 7: Employment intensity of the infrastructure generated under the VUP

Type of infrastructure/activity	Total infrastructure generated	Number of households employed	Average duration of employment (in days)	Wages as % of total costs
Terracing	44,704 ha	167,196	43	92
Water network/irrigation & conservation	178 km 91 ponds	4,125	87	45
Reforestation	2,266 ha	10,321	38	75
Road construction & rehabilitation	1,287 km	42,454	43	57
Other forms of construction (markets, schools and health centres)	254 entities	6,838	78	17

	2009-10		2010-11		2011-12	
Type of infrastructure/activity	**Infra-structure created**	**Wages, as % of total costs**	**Infra-structure created**	**Wages, as % of total costs**	**Infra-structure created**	**Wages, as % of total costs**
Terracing	11,149 ha	96.2	23,707 ha	94.3	9,848 ha	75.2
Water network/irrigation & conservation			79 km 45 ponds	62.8	99 km 46 ponds	31.2
Reforestation			2,122 ha	73.1	144 ha	81.5
Road construction & rehabilitation	147 km	90.5	467 km	56.1	673 km	53.2
Other forms of construction (markets, schools and health centres)	46 entities	22.1	54 entities	21.6	154 entities	14.2

Source: VUP administrative records.

In the case of the VUP in Rwanda, we know much less about the potential long-term employment effects of different PW projects. The type of infrastructure projects performed as part of the VUP range from agriculture-centred interventions such as soil and water conservation measures to road rehabilitation and the construction of public institutions such as school, health centres and markets. Table 7 above gives details on the employment intensity of the infrastructure projects performed as part of the VUP from 2009 to 2012.

Since land is scarce in Rwanda, early PW projects concentrated mainly on building or rehabilitating terraces, both on communal but to a lesser extent also on private land. Terracing projects can be performed at short notice since they do not require a lengthy

design or procurement process. Also, they are appealing since they provide employment for a large number of beneficiaries at once, labour ratios are high and the project costs consist mainly of direct wage payments to beneficiaries. However, no evidence could be found as to whether terracing projects affect employment in the long run. On the other hand, since they increase and improve the area available for agricultural output, they should benefit employment in that sector.

Given the country's size and topology, the opportunities for undertaking terracing projects in Rwanda have been quickly exhausted. For this reason, PW projects are tending more and more to take the form of construction works, where there is a lower labour intensity. The evidence in section 4.4 suggested that road construction and irrigation projects had positive employment effects. While these projects have a considerably lower labour ratio (57% and 45% respectively), they might still represent the best compromise between the short-term and long-term employment effects. Other construction projects (markets, schools and health centres) are much more capital-intensive with less than 20% of total expenditure going towards wages. Given that the empirical evidence suggests that these activities have little to no long-term employment effects, they should probably not be included in PW programmes.

A detailed analysis of the MGNREGA and the VUP suggests that PW projects do not necessarily involve a trade-off between short-term and long-term employment effects as long as projects can be identified which serve both goals. It is crucial to understand, however, that the demand for such projects might be limited. Once this demand has been satisfied and the list of projects serving both goals has been exhausted, policy-makers will have to decide which goal is more relevant: short-term employment creation or long-term employment creation. Also, given the limited long-term effects of certain projects, the question of cost-effective alternative policy options will gain increasing importance.

6 Lessons learned and policy recommendations

PW programmes have become an increasingly popular policy tool in developing countries. The main reason for their popularity lies in their potential 'double dividend' of providing employment and income for the poor and while at the same time generating and rehabilitating infrastructure which should reduce poverty and enhance growth.

Over the years, PW programmes have become not only more popular, but also more sophisticated and ambitious. Originally used mainly as short-term tools for mitigating the effects of economic and natural crises, PW programmes are broadening out from this narrow focus to adopt a wider scope in which they also seek to achieve certain social protection and broader human development objectives. However, while different objectives might not be mutually exclusive, they might not be achievable at the same time. Moreover, PW programmes might not be the most suitable means of achieving the objectives in question. Hence the question addressed by this review: how should PW programmes be designed in order to achieve potentially competing objectives?

This review concentrates on employment as a driver for poverty reduction and growth, and asks whether and how PW programmes can contribute to sustainable employment growth.

The review concentrates on four causal channels through which employment might be affected:

1. productive investments by programme beneficiaries;
2. wage effects in the targeted regions;
3. the development of beneficiaries' skills;
4. enhanced economic activity induced by the infrastructure generated thanks to PW programmes.

We have demonstrated that very little is known about the potential employment effects of PW programmes and the underlying channels. Despite the rapid increase in the number of PW programmes, very few studies have assessed their potential effects, and even less evidence has been obtained about their longer-term effects. To date, impact assessments have been based mainly on quasi-experimental approaches; randomised control trials of PW interventions are rare. Also, there is very little systematic cost-benefit data on PW programmes which also restricts any comparison of their cost-effectiveness vis-à-vis other programmes, i.e. standard cash transfer programmes.

The limited empirical evidence currently available suggests that PW programmes might not always be the most cost-efficient policy tool for creating sustainable employment. If it is true that the direct transfer of cash to beneficiaries is more cost-effective than PW schemes in terms of increasing beneficiaries' incomes, as was found by Murgai et al. (2015), then an argument for PW programmes instead of cash transfers may be made only if their effects on sustainable employment are greater than those of cash transfers, and if these can be achieved to a degree that shifts the cost-benefit ratio in favour of PW programmes. Arguably, this needs better evidence than is currently available. Nevertheless, we have identified a number of conditions in which PW programmes could be expected to have positive effects on sustainable employment creation.

Account needs to be taken of the following aspects of the design and implementation of PW programmes in order to enhance their employment potential.

First, the evidence shows that standard short-term PW interventions are insufficient for fostering productive investments by beneficiaries. The average income transfers resulting from these programmes are typically too low and too unpredictable to induce beneficiaries to step up their investments. Programmes which secure repeated benefits over several years and a reliable access to employment over the project cycle – ideally in the form of an employment guarantee – achieve better results. Another way of increasing investments is by combining the PW component with complementary services, e.g. in form of credit.

Second, the extent to which PW programmes affect wage levels and employment depends on the wage level, the amount of employment generated, and local labour market conditions. If the government offers enough employment at higher-than-market wages to affect the total demand for labour in the economy, the supply of labour to the private sector is likely to fall and the price of labour will tend to rise. Increases in private-sector wages are likely to depend on the number of beneficiaries, as well as the duration of employment provided and the extent to which these programmes then reduce underemployment. Larger and longer-term programmes are thus more likely to influence private-sector wages and in consequence to foster sustainable employment.

There are winners and losers, however, as a reduction in the labour supply to the private sector might lead employers to find substitutes for labour, thus reducing the private-sector labour demand. In situations with a high concentration of market power, however, a reduction in the labour supply to the private sector might not necessarily translate into technology shifts, nor into a reduction in private-sector employment. Informed decisions require a more in-depth understanding and ex-ante diagnostics of local labour markets.

Third, while skills development and training are becoming increasingly popular features of PW programmes, there is little evidence as to whether such components push the cost-effectiveness of PW programmes up or down. On-the-job training could boost employability if the training matches the demand for skills in the local labour market. By contrast, the existing evidence suggests that it is difficult to design appropriate formal training programmes within the realm of PW programmes, particularly if the duration of training is limited due to the short-term nature of employment provided under PW schemes. This makes it very challenging to equip beneficiaries with skills that the private sector can and will employ. Furthermore, combining PW programmes with training might undermine the self-targeting mechanism inherent to PW programmes, as the training component is likely to attract different groups than the work component.

Fourth, the evidence suggests that different infrastructure projects are likely to benefit different groups. We found positive evidence in particular for infrastructure projects designed to raise agricultural output and improve market access, e.g. in the form of irrigation and water conservation, land development and rehabilitation, flood control and road construction. Positive effects are likely to arise only if the developed infrastructure meets a minimum quality standard. Community participation can affect the quality and maintenance of the infrastructure generated. Early evidence from Ethiopia suggests that community participation in project planning can positively affect project maintenance, thus ensuring the sustainability of the productive infrastructure. However, technical support and expertise are necessary during the implementation stage, even within a community-centred approach, and need to be provided to ensure project quality.

Project selection can entail essential trade-offs between short-term employment effects, achieved by highly labour-intensive projects, and long-term employment effects produced by the infrastructure created as a result of the project in question. We identified a number of projects that appear broadly to cater for both aims, such as water conservation and irrigation works, road construction, flood control and land development and rehabilitation. Other projects appear to benefit neither short-term nor long-term employment creation. Examples are drainage works, building and the maintenance of public buildings. Given the limited amount of projects that serve both goals, it is crucial to acknowledge that there might be only limited demand for such projects. Once this demand has been satisfied and the list of projects which serve both goals has been exhausted, policy-makers will have to decide whether PW programmes are still the most cost-effective policy means of reducing poverty and boosting growth.

To conclude, PW programmes are an interesting policy tool that should be borne in mind by governments and German and international development cooperation agencies, as a means of tackling poverty, economic crises and rising unemployment. However, our analysis revealed that PW programmes are successful in creating short-term and long-term employment opportunities only if certain criteria are met.

In order to create sustainable employment in a cost-effective way, PW programmes must foster productive investments by beneficiaries. The ideal PW programme thus generates a sufficiently large and reliable income transfer and also acts as a safety net, giving households access to work in the event of shocks. Thus, PW programmes require a degree of flexibility in their design, which means that they should also involve the selection and planning of emergency-response projects. Since savings are not accumulated overnight, PW programmes should also provide continuous support over several years and not be limited to a one-off period. The empirical evidence suggests that the minimum programme duration should be three years in order to allow for productive investments to take place. PW programmes also need to be reliable, i.e. they must offer predictable work opportunities.

Instead of seeking to develop skills with the aid of expensive training components with uncertain effects, programmes should provide complementary services, such as access to credit, in order to promote investments, agricultural output and self-employment.

Given that the majority of PW participants in rural areas are engaged in subsistence farming and agricultural wage labour, PW programmes should be concentrated in the agricultural lean season so as not to interfere with agricultural production and to provide employment opportunities at times of high underemployment.

PW programmes should also make use of the wage-setting mechanism in such a way as to promote self-selection of those most in need. However, wage-setting must be preceded by an in-depth diagnostic analysis of local labour markets. In a competitive labour market, PW wages should be set at the market wage in order not to hinder the generation of sustainable employment in the private sector. In monopsonistic markets, PW wages higher than the market wage are likely to stimulate demand for employment in the PW programme in the short run. However, they will also encourage private-sector wages to increase without hurting private-sector employment. In other words, PW programmes may also have a positive effect on the quality of employment in the long run. However, there is evidence that PW wages as self-targeting tool do not work properly if other factors such as rationing, access and distance to the PW site limit access to such schemes. Hence, these factors have to be taken carefully into account in the design and selection of PW projects as they can cause unintended distributional effects and exclude the poor from accessing the work opportunities.

Project selection should concentrate on activities with a high labour intensity that are likely to raise employment in both the short and the long term thanks to their effect on agricultural output and market access. These activities include water conservation and irrigation works, road construction, flood control and land development and rehabilitation. While the final project selection should involve the community in order to ensure ownership, use and sustainability of the infrastructure, some form of technical expertise is required during the implementation stage.

References

Alderman, H., & Yemtsov, R. (2014). How can safety nets contribute to economic growth? *The World Bank Economic Review, 28*(1), 1–20.

Alik-Lagrange, A., & Ravallion, M. (2015). *Inconsistent policy evaluation: A case study for a large workfare program* (Working Paper No. 21041). Cambridge, MA: National Bureau of Economic Research (NBER).

Almeida, R. K., & Galasso, E. (2010). Jump-starting self-employment? Evidence for welfare participants in Argentina. *World Development, 38*(5), 742–755.

Altenburg, T., Fischer, C., Huck, K., Kruip, A., Mueller, S., & Soerensen, S. (2015). *Managing costal ecosystems in the Philippines: What Cash for Work Programmes can contribute*. Mimeo. Bonn: German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE).

Andersson, C., Mekonnen, A., & Stage, J. (2011). Impacts of the Productive Safety Net Program in Ethiopia on livestock and tree holdings of rural households. *Journal of Development Economics, 94*(1), 119–126.

Andrews, C., Backiny-Yetna, P., Garin, E., Weedon, E., Wodon, Q., & Zampaglione, G. (2011). *Liberia's Cash for Work Temporary Employment Project: Responding to crisis in low income, fragile countries* (SP Discussion Paper No. 1114). Washington, DC: The World Bank.

Azam, M., Ferré, C., & Ajwad, M. (2013). Can public works programs mitigate the impact of crises in Europe? The case of Latvia. *IZA Journal of European Labor Studies, 2*(1), 10.

Bardhan, P. K. (1979). Labor supply functions in a poor agrarian economy. *The American Economic Review, 69*(1), 73–83.

Barrett, C. B., Holden, S., & Clay, D. C. (2004). Can food-for-work programmes reduce vulnerability? In S. Dercon (Ed.), *Insurance against poverty* (pp. 361–386). Oxford: Oxford University Press.

Basu, A. K., Chau, N. H., & Kanbur, R. (2009). A theory of employment guarantees: Contestability, credibility and distributional concerns. *Journal of Public Economics, 93*(3–4), 482–497.

Beegle, K., Galasso, E., & Goldberg, J. (2014). *Direct and indirect effects of Malawi's Public Works Program on Food Security*. Mimeo. Washington, DC: The World Bank.

Berg, E., Bhattacharyya, S., Rajasekhar, D., & Manjula, R. (2014). *Can public employment schemes increase equilibrium wages? Evidence from a natural experiment in India* (Working Paper No. 14/317). Bristol: University of Bristol.

Berhane, G., Gilligan, D. O., Hoddinott, J., Kumar, N., & Taffesse, A. S. (2014). Can social protection work in Africa? The impact of Ethiopia's Productive Safety Net Programme. *Economic Development and Cultural Change*, 1–26.

Berhane, G., Hoddinott, J., Kumar, N., Taffesse, A. S., Diressie, M. T., Yohannes, Y.,. . . Sima, F. (2013). *Evaluation of Ethiopia's Food Security Program: Documenting progress in the implementation of the Productive Safety Nets Programme and the Household Asset Building Programme*. ESSP II - EDRI Report. Addis Ababa: International Food Policy Research Institute (IFPRI).

Besley, T., & Coate, S. (1992). Workfare versus welfare: Incentive arguments for work requirements in poverty-alleviation programs. *The American Economic Review, 82*(1), 249–261.

Bhargava, A. K. (2014). *The impact of India's rural employment guarantee on demand for agricultural technology* (Discussion Paper 01381). Washington, DC: International Food Policy Research Institute (IFPRI).

Bianchi, M., & Bobba, M. (2013). Liquidity, risk, and occupational choices. *The Review of Economic Studies, 80*(2), 491–511.

Binswanger-Mkhize, H. P. (2012). Is there too much hype about index-based agricultural insurance? *Journal of Development Studies, 48*(2), 187–200.

Blattman, C., Green, E., Jamison, J., Lehmann, M. C., & Annan, J. (2015). *The returns to microenterprise support among the ultra-poor: A field experiment in post-war Uganda* (Working Paper No. 21310). Cambridge, MA: National Bureau of Economic Research (NBER).

Blattman, C., & Ralston, L. (2015). *Generating employment in poor and fragile states: Evidence from labor market and entrepreneurship programs*. Mimeo. New York: Columbia University.

Card, D. E., & Krueger, A. B. (1995). *Myth and measurement: The new economics of the minimum wage*. Princeton, NJ: Princeton University Press.

Chirwa, E., Mvula, P., & Dulani, B. (2004). *The evaluation of the improving livelihoods through public works programme*. Mimeo. Lilongwe: Wadonda Consult.

Christian, S., Janvry, A. de, Egel, D., & Sadoulet, E. (2013). *Quantitative evaluation of the Social Fund for Development Labour-intensive Work Program (LIPW)*. Mimeo. Berkeley: University of California at Berkeley.

Datt, G. (1996). *Bargaining power, wages and employment: An analysis of agricultural labor markets in India*. New Delhi, Thousand Oaks, CA: Sage Publications.

del Ninno, C., Subbarao, K., & Milazzo, A. (2009). *How to make public works work: A review of the experiences* (SP Discussion Paper No. 0905). Washington, DC: The World Bank.

Dercon, S. (1996). Risk, crop choice, and savings: Evidence from Tanzania. *Economic Development and Cultural Change, 44*(3), 485–513.

Dercon, S., & Christiaensen, L. (2011). Consumption risk, technology adoption and poverty traps: Evidence from Ethiopia. *Journal of Development Economics, 96*(2), 159–173.

Devereux, S., & Guenther, B. (2007). *Social protection and agriculture in Ethiopia*. Country case study paper prepared for a review commissioned by the FAO on 'Social Protection and Support to Small Farmer Development'. Rome: Food and Agriculture Organization of the United Nations (FAO).

Devereux, S., Sabates-Wheeler, R., Slater, R., Tefera, M., Brown, T., & Teshome, A. (2008). *Ethiopia's Productive Safety Net Programme (PSNP)*. 2008 Assessment Report. Brighton: Institute of Development Studies (IDS).

Dutta, P., Murgai, R., Ravallion, M., & van de Walle, D. (2012). *Does India's employment guarantee scheme guarantee employment?* (Policy Research Working Paper 6003). Washington, DC: The World Bank.

Food and Agriculture Organization of the United Nations (FAO) Office of Evaluation. (2013). *Like a good trip to town without selling your animals: A study of FAO Somalia's Cash for Work Programme*. Impact Evaluation Report. Rome: Author.

Galasso, E., & Ravallion, M. (2004). Social protection in a crisis: Argentina's plan Jefes y Jefas. *The World Bank Economic Review, 18*(3), 367–399.

Gatsinzi, J. (2012). Rwanda: Wage setting-from policy to practice. In K. Subbarao, C. del Ninno, C. Andrews, & C. Rodríguez-Alas (Eds.), *Public works as a safety net* (pp. 197–211). Washington, DC: The World Bank.

Gehrke, E. (2014). *An employment guarantee as risk insurance? Assessing the effects of the NREGS on agricultural output decisions* (Discussion Paper 152). Nuremberg: Bavarian Graduate Program in Economics (BGPE).

Gehrke, E. (2015). *Can public works infrastructure affect employment outcomes? Evidence from the NREGA in India* (Discussion Paper 9/2015). Bonn: German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE).

Gertler, P. J., Martinez, S. W., & Rubio-Codina, M. (2012). Investing cash transfers to raise long-term living standards. *American Economic Journal: Applied Economics, 4*(1), 164–192.

Gilligan, D. O., Hoddinott, J., & Taffesse, A. S. (2009). The Impact of Ethiopia's Productive Safety Net Programme and its Linkages. *Journal of Development Studies, 45*(10), 1684–1706.

Government of Bolivia. (2002). *Decreto Supremo No 26317*.

Government of Ethiopia. (2004). *Productive Safety Net Programe*. Programme implementation manual. Addis Ababa: Ethiopia Ministry of Agriculture and Rural Development.

Government of South Africa. (2010). *Expanded Public Works Programme: Five Year Report, 2004/05-2008/09: Reaching the one million target*. Pretoria: South Africa Department of Public Works.

Government of South Africa. (2014). *EPWP phase 2 performance*. Presentation (November 2014). Pretoria: South Africa Department of Public Works.

Hagen-Zanker, J., McCord, A., Holmes, R., Booker, F., & Molinari, E. (2011). *Systematic review of the impact of employment guarantee schemes and cash transfers on the poor*. London: Overseas Development Institute.

Harris, D., McCord, A., & Sony, K. C. (2013). *Politics of a national employment guarantee scheme in Nepal: An initial assessment of feasibility*. London: Overseas Development Institute.

Hartwig, R. (2014). *The Vision 2020 Umurenge Programme (VUP): Impact evaluation report (2009-2014)*. Kigali: Local Administrative Entities Development Agency.

Hernani-Limarino, W., Villegas, M., & Yanez, E. (2011). *Unemployment in Bolivia: Risks and labor market policies* (IDB-WP-271). Washington, DC: Inter-American Development Bank (IDB).

Hoddinott, J., Berhane, G., Gilligan, D. O., Kumar, N., & Seyoum Taffesse, A. (2012). The impact of Ethiopia's Productive Safety Net Programme and related transfers on agricultural productivity. *Journal of African Economies, 21*(5), 761–786.

Honorati, M., Gentilini, U., Yemtsov, R., Silva, V., & O'Keefe, P. (2015). *The state of social safety nets 2015*. Washington, DC: The World Bank.

Imbert, C., & Papp, J. (2015). Labor market effects of social programs: Evidence from India's employment guarantee. *American Economic Journal: Applied Economics, 7*(2), 233–263.

International Labour Organization. (2012). *Towards the right to work: A guidebook for designing innovative public employment programmes*. Geneva: International Labour Organization (ILO).

Iturriza, A., Bedi, A. S., & Sparrow, R. (2011). Unemployment assistance and transition to employment in Argentina. *Economic Development and Cultural Change, 59*(4), 811–837.

Jahan, R. (2010). *Dynamics of implementation of 100 days Employment Generation Programme: A study of Mouchak and Holdia Union Parishads* (Master Thesis). North South University, Dhaka.

Juras, R. (2014). The effect of public employment on children's work and school attendance: Evidence from a social protection program in Argentina. *IZA Journal of Labor & Development, 3*(1), 14.

Karlan, D., Osei, R., Osei-Akoto, I., & Udry, C. (2014). Agricultural decisions after relaxing credit and risk constraints. *The Quarterly Journal of Economics, 129*(2), 597–652.

Lal, R., Miller, S., Lieuw-Kie-Song, M., & Kostzer, D. (2010). *Public works and employment programmes: Towards a long-term development approach* (IPC-IG Working paper No. 66). Brasilia: United Nations Development Programme International Policy Centre for inclusive Growth (UNDP/IPC-IG).

Landa, F. (2003). *Transferencia de recursos hacia los más pobres. Un análisis del PLANE con escenarios contrafactuales*. Documento de Trabajo. La Paz: Unidad de Análisis de Políticas Sociales y Económicas (UDAPE).

Lichand, G. (2010). *Decomposing the effects of CCTs on entrepreneurship*. Economic Premise 41. Washington, DC: The World Bank.

Lieuw-Kie-Song, M. (2011). *Integrating public works and cash transfers in Ethiopia: Implications for social protection, employment and decent work* (IPC-IG Working paper No. 84). Brasilia: United Nations Development Programme International Policy Centre for inclusive Growth (UNDP/IPC-IG).

Lieuw-Kie-Song, M. (2014). *Study on the Labour-intensive Work Programme in Yemen*. Mimeo. Geneva: International Labour Organization (ILO).

Lieuw-Kie-Song, M., Philip, K., Tsukamoto, M., & van Imschoot, M. (2011). *Towards the right to work: Innovations in Public Employment Programmes (IPEP)*. Geneva: International Labour Organization (ILO).

Malmqvist, O. (2012). *Gender and cost-effectiveness in public work programmes in Bolivia 2004-2006* (Master Thesis). Gothenburg: School of Business, Economics and Law, University of Gothenburg.

McCord, A. (2005). A critical evaluation of training within the South African National Public Works Programme. *Journal of Vocational Education and Training, 57*(4), 563–585.

Ministry of Rural Development, India (MoRD). (2012). *MGNREGA Sameeksha. An anthology of research studies on the Mahatma Gandhi National Rural Employment Guarantee Act, 2005. 2006-2012*. New Delhi: Orient BlackSwan.

Ministry of Rural Development, India. (2013). *Mahatma Gandhi National Rural Employment Guarantee Act, 2005*. Operational Guidelines 2013 (4th Edition). New Delhi: Author.

Murgai, R., Ravallion, M., & van de Walle, D. (2015). Is workfare cost effective against poverty in a poor labor-surplus economy? *The World Bank Economic Review,* (advance access).

National Audit Office. (2011). *Transferring cash and assets to the poor* (Department for International Development. HC: Vol. 1587). London: Stationery Office.

National Food Policy Capacity Strengthening Programme, & Defense Base Closure and Realignment Commission (BRAC). (2009). *Study on the first phase of the 100-Day Employment Generation Programme*. Technical Report. Dhaka: Authors.

Nepal National Planning Commission. (2012). *Assessment of Karnali Employment Program*. Kathmandu: Author.

Oxford Policy Management. (2014). *Social protection through public works in Nepal: Improving the Karnali Employment Programme*. Briefing Note October 2014 (Karnali Empolyment Programme Technical Assistance). Oxford: Oxford Policy Management.

Rivero, R. (2003). *Descripción y análisis de los programas de empleo en Bolivia*. Unpublished manuscript.

Rosas, N., & Sabarwal, S. (2015). *Opportunity and resilience: Do public works have it all? Evidence from a randomized evaluation in Sierra Leone*. Mimeo. Washington, DC: The World Bank.

Rosenzweig, M. R., & Binswanger, H. P. (1993). Wealth, weather risk and the composition and profitability of agricultural investments. *The Economic Journal, 103*(416), 56.

Secretariat of the National Team for the Acceleration of Poverty Reduction (TNP2K). (2014). *PNPM Mandiri Information Kit 2012-2013*. Jakarta: Author.

Secretariat of the National Team for the Acceleration of Poverty Reduction (TNP2K). (2015). *Community Empowerment Programme (PNPM)*. Retrieved from http://www.tnp2k.go.id/en/frequently-asked-questions-faqs/cluster-ii-2/community-empowerment-programme-pnpm/

Shuka, Z. S. (2012). *From the inside out: Importance of community participation in sustaining an asset-based social protection program. The case of the Productive Safety Net Program in Doba, Ethiopia* (Master Thesis). The Hague: International Institute of Social Studies, Erasmus University.

Subbarao, K., del Ninno, C., Andrews, C., & Rodríguez-Alas, C. (Eds.). (2012). *Public works as a safety net*. Washington, DC: The World Bank.

Tcherneva, P., & Wray, R. (2007). *Public employment and women: The impact of Argentina's Jefes Program on Female Heads of Poor Households* (Working Paper No. 519). Annandale-on-Hudson: The Levy Economics Institute of Bard College.

Vaidya, K., Regmi, P. P., & Ghimire, B. (2010). *Appraisal of the Karnali Employment Programme as a regional social protection scheme*. Kathmandu: International Labour Organization (ILO).

Wodon, Q. (2012). *Poverty and the policy response to the economic crisis in Liberia. A World Bank study*. Washington, DC: World Bank.

World Bank. (2012). *After five years, PNPM Mandiri becomes an integral part for the development of communities across Indonesia*. Retrieved from http://www.worldbank.org/en/news/feature/2012/08/07/after-five-years-PNPM-Mandiri-becomes-an-integral-part-for-the-development-of-communities-across-indonesia

World Bank. (2013). *Bangladesh: Employment generation for the poorest paving the way out of seasonal poverty*. Retrieved from http://www.worldbank.org/en/results/2013/04/15/bangladesh-employment-generation-for-the-poorest

World Bank. (2014). *World Development Report 2014: Risk and opportunity – managing risk for development.* Washington, DC: Author.

Youth Employment Inventory. (2015). *Income Support and employability Program (PATI)*. Retrieved from http://www.youth-employment-inventory.org/inventory/view/663/

Zimmermann, L. (2014). *Why guarantee employment? Evidence from a large Indian public-works program*. Mimeo. Athens: University of Georgia.

Appendices

Appendix 1: Plan Jefes y Jefas de Hogar Desocupados (Argentina)

General description

The Jefes y Jefas de Hogar Desocupados Plan (Jefes y Jefas) was launched in January 2002 (in response to the economic crisis that hit Argentina at the end of 2001) and was phased out in 2007. Jefes y Jefas was a 'universal' programme, i.e. it did not have an explicit poverty focus. The programme was intended to provide direct income support to families with dependents whose head had become unemployed during the crisis. The eligibility criteria were that the applicant should be the head of a household and unemployed. The programme provided for a transfer of ARS 150 per month (USD 77) to beneficiary households.[12] The value of the transfer was less than the observed market wage for unskilled labour and represented about half of the mean per capita income in 2002. Beneficiaries were required to do a minimum of 20 hours per week of basic community work or attend training or adult education courses.

The work requirement was used as a self-targeting instrument in combination with lower-than-market wages. However, entry to the programme was limited to those who qualified and who had signed up at their local council offices or the local offices of the Ministry of Labour by 17 May 2002. The programme was *de facto* closed for new entrants in May 2003, thus discriminating against late-comers (Tcherneva & Wray, 2007). By the end of the first year – the high point of the programme – Jefes y Jefas covered 2 million households (equivalent to 5% of the total population or 13% of the labour force at the time).

Governance aspects

The programme was implemented under the aegis of the Ministry of Labour. The costs of the programme in the first year were estimated at USD 500 million (1.0% of GDP) (Tcherneva & Wray, 2007). Work activities were assigned by the local offices of the Ministry of Labour (Galasso & Ravallion, 2004). The *ad-hoc* way in which the programme was implemented made it difficult to arrange work opportunities. Moreover, programme administrators were not able to verify whether an applicant was the head of a household. This explains the large number of female participants (over 70% of the participants were female). Unemployment could only be verified for applicants with previously registered formal sector employment. However, over half the labour force was engaged in the informal sector at the time.

Technical aspects

Jefes y Jefas was an all-year-round programme without any limitation in the duration of support. The most common type of activities performed as part of the programme were community or municipal services (87%) such as working in communal kitchens or maintaining public places (squares and parks). Other infrastructure projects were less common. The proportion of participants attending training and other educational courses was 7% and 2% respectively. The remaining participants worked for private firms or other institutions on a wage subsidy (Tcherneva & Wray, 2007). We were unable to obtain detailed data on cost-effectiveness, capital-labour ratios and training curricula. Apart from the training and educational activities offered as part of the programme, Jefes y Jefas did not provide other complementary services such as access to credit.

Impact evaluations

A number of impact evaluations using quasi-experimental methods were conducted as part of the programme (Almeida & Galasso, 2010; Galasso & Ravallion, 2004; Iturriza et al., 2011; Juras, 2014). The impact evaluations concentrated mainly on the programme's income and employment effects. However, they did not provide much insight into the channels to sustainable employment. Galasso and Ravallion (2004) showed that, despite incomplete coverage, the programme was effective in reducing aggregate unemployment and extreme poverty during the crisis. However, in taking a more detailed look at the employment situation, Iturriza et al. (2011) found that Jefes y Jefas' beneficiaries were 14 percentage points less likely to transit to employment later than those that applied but did not receive any benefits.

12 We were unable to obtain information on the average duration of support.

Appendix 2: Employment Generation for the Poorest Programme (Bangladesh)

General description

The Employment Generation for the Poorest Programme (EGPP) was launched in 2008 in response to the global food crisis as the 100-Day Employment Generation Programme (DEGP). Having undergone various modifications since 2009, the programme was reinstated as the EGPP in 2010. The EGPP is intended to provide cash for work during the two annual lean seasons. It is targeted at households whose heads are casual labourers, who own less than 0.5 acres of agricultural land and who do not receive any other safety-net benefits. The age range for beneficiaries is fixed at 18-50 years. The initial wage offered for EGPP projects was set below the market wage at BDT 100/day (equivalent to USD 1). In 2012, wage rates of around BDT 175/day (ca. USD 2) were reported.

The programme has had around 630,000 beneficiaries (0.4% of the population) per year (of whom 200,000, or around 30%, are women) since 2010, creating 50 million working days of employment (World Bank, 2013). This amounts to an average duration of employment of 80 days per person per year, which, compared with other programmes (such as the MGNREGA programme) is a large number. The 100-day target was revised downwards following a wage increase (World Bank, 2013). The EGPP is seen as an employment guarantee even though the entitlement is not guaranteed by law, as it is under the MGNREGA scheme. If a person is not offered work within 15 days of registration, a daily unemployment allowance of BDT 40 (USD 0.4) is paid for the first 30 days. Thereafter, the allowance increases to BDT 50 (USD 0.5) for up to 100 days.

Governance aspects

The programme is implemented under the aegis of the Ministry of Disaster Management and Relief. The EGPP has received financial support from the World Bank. A budget of USD 150 million (0.1% of GDP) was allocated to the programme for the 2013 financial year (World Bank, 2013). In order to increase ownership, work projects are identified in consultation with communities. In order to reduce the fiduciary risks, EGPP wages are paid directly into beneficiaries' bank accounts. In order to improve public accountability and the beneficiary selection process, all work sites are required to install notice boards and make beneficiary lists publicly available.

Technical aspects

The programme provides work during the agricultural lean season, i.e. for 2.5 months between September and November and 2 months in March and April. While project selection was intended to be integrated in local development planning, projects were identified and selected on an *ad-hoc* basis with little local community involvement – at least in the early stages of the programme. Priority was also given to large-scale projects such as road and barrage construction rather than small-scale interventions in order to meet the employment targets (National Food Policy Capacity Strengthening Programme & BRAC, 2009). Almost 95% of the projects performed since 2010 have involved rural road construction. The average project costs allocated to wages ranges between 55 and 60%. The figure was reported to be 45% in 2014 (World Bank, 2013). The EGPP does not provide any complementary services.

Impact evaluations

Third-party impact evaluation evidence of the programme is not yet available, even though baseline, mid-line and end-line household surveys were conducted with support from the World Bank in 2010, 2011 and 2012 respectively. Jahan (2010) performed a qualitative study of the first phase of the programme in 2008. He showed that the average duration of employment was 40 days at the time. Although beneficiaries reportedly improved their food intake, they did not increase their wealth or lower their borrowing and loan dependence in the short run (Jahan, 2010).

Appendix 3: Plan Nacional de Empleo de Emergencia (Bolivia)

General description

The Plan Nacional de Empleo de Emergencia (PLANE) was created in 2001 as a government response to rising unemployment and underemployment in Bolivia. The first phase ran from October 2001 to December 2002. Despite an economic recovery, the programme was extended by two more phases until December 2005.

The programme's initial objective was "to mitigate the negative impacts of the economic slowdown on employment by providing short-term employment opportunities to poor unemployed individuals" (Decreto Supremo No 26317, 2002). Later on, it also sought to reduce social tensions and strengthen governance. PLANE was targeted at jobless people aged between 25 and 50. As with Jefes y Jefas in Argentina, PLANE participants were offered a lump-sum payment of BS 120/week (USD 20) in exchange for 35 hours of work per week for the duration of the project. In the third phase, i.e. May 2004-December 2005, PLANE provided employment to around 120,000 beneficiaries, i.e. 9.5% of the active population or 1.1% of the total population. The duration of support under PLANE was not formally limited; participants could reapply for further employment when their contracts ended. Contracts lasted from one week to three months.

Governance aspects

The PLANE was implemented under the aegis of the Ministry of Labour. The budget for the first phase of the programme was USD 32 million. The budget for the second phase was USD 27 million, and the budget for the third phase was USD 18 million (0.2% of GDP). As in Argentina, eligibility, which was based on employment status, could not be verified due to the high level of informality in Bolivia at the time.

Technical aspects

Although we were unable to obtain details on the project identification and selection process, we did find out that the main projects implemented as part of PLANE consisted of road maintenance, road pavement, and maintenance of other public areas, urban forestry, maintenance of ditches and the cleaning of canals and rivers. Wage payments in the third phase accounted for 89% of total costs (Malmqvist, 2012). PLANE does not provide any complementary services.

Impact evaluations

The empirical evidence on PLANE is mostly descriptive in nature (e.g. Landa (2003) and Rivero (2003)). Hernani-Limarino, Villegas, and Yanez (2011) assessed the employment effects of the programme (second phase) using quasi-experimental methods and found no effects. Neither the likelihood of being employed nor the level of wages seemed to have been affected by the programme. The authors attributed this to a lack of skills development (in the absence of a training component) and the temporary nature of support, with contracts designed to last no more than three months.

Appendix 4: Programa de Apoyo Temproal al Ingreso (El Salvador)

General description

The Programa de Apoyo Temporal al Ingreso (PATI) was launched in 2009 in two pilot municipalities. In 2010, it was extended to 11 municipalities affected by storms and in 2012 to another 10 municipalities with a high prevalence of violence.

The programme aims to reduce income vulnerability and improve employability, and therefore combines or rather conditions income transfers on the completion of training activities. PATI provides temporary income support of USD 100/month for a period of six months to vulnerable urban households in exchange for participation in both physical labour and training programmes (80 hours of training). Experienced social workers teach participants not only technical skills such as sewing, cooking and car repairs, but also entrepreneurial skills and 'soft' skills such as how to prepare for job interviews or write résumés, and provide job counselling and search assistance. To encourage participation, the programme also provides child-care support and transport stipends (Youth Employment Inventory, 2015).

PATI is targeted at municipalities with the highest urban poverty rates and unemployed people (particularly female household heads) aged between 16 to 30. The programme reached 40,000 beneficiaries (0.6% of the population) by 2012.

Governance aspects

Responsibility for the implementation of PATI lies with the Fondo de Inversion Social para el Desarrollo Local (FISDL), a government agency operating under the Secretaria Tecnica de la Presidencia. The total annual cost of the programme is estimated at USD 50 million (0.2% of GDP).

Technical aspects

Projects are designed by the communities and range from rehabilitating infrastructure to providing social services. We were not able to obtain detailed data on cost-effectiveness, capital-labour ratios and training curricula. Apart from the training activities offered as part of the programme, PATI does not provide other complementary services such as access to credit.

Impact evaluations

An impact evaluation funded by a World Bank-managed Multi-donor Trust Fund (MDTF) was launched in March 2011. The detailed findings have yet to be published. However, a preliminary assessment showed that PATI has a positive impact on improving job readiness and the willingness to start a business (World Bank, 2014).

Appendix 5: Productive Safety Net Programme (Ethiopia)

General description

The PSNP programme was introduced in Ethiopia in 2005 as an alternative response to the recurring food crises and chronic food insecurity in Ethiopia. The PSNP initially covered 190 historically famine-prone woredas (districts). The PSNP currently operates on a virtually nationwide basis in 300 of the total of 350 woredas.

The PSNP aims "to provide transfers to the food-insecure population in chronically food-insecure woredas in a way that prevents asset depletion at the household level and creates assets at the community level" (Government of Ethiopia, 2004). The programme is designed as a safety net and comprises two core components, one of which is PW.[13] In the PW component, beneficiaries were initially paid a daily wage of ETB 6 (equivalent to USD 0.7) or 3 kg of cereals for work on labour-intensive projects. The wage was raised to ETB 8 and 10 (USD 0.8 and 0.9) in 2008 and 2010 respectively. The duration of employment varies by source.[14] The most recent report indicates that the average duration of employment ranges between 62 days in 2006 and 82 days in 2010 (Berhane et al., 2013). The average delay in wage payments is around 40 days (Berhane et al., 2013).

Beneficiaries are identified through a mix of administrative guidelines and community knowledge. Households are formally eligible households if they have been food-short for three years, have received government assistance and have been subject to shocks. The initial eligibility period for the programme was three years. The PSNP is the largest safety net programme in sub-Saharan Africa outside of South Africa, reaching approximately 7 million people (10% of the population).

Governance aspects

The PSNP is implemented under the aegis of the Ministry of Agriculture. The programme is supported by several development partners, including the World Bank, the European Commission, USAID, Sida, WFP and Unicef, and has an annual budget of nearly USD 500 million (equivalent to 1% of GDP).

Technical aspects

PW activities are concentrated in the agricultural lean season between January and June of each year. Community infrastructure projects conducted as part of the PW component are decided at community level and concentrate largely on soil and water conservation (60%) (Lieuw-Kie-Song, 2011). Although we were not able to obtain detailed data on the cost-effectiveness and capital-labour ratios of community projects, several studies have documented the poor quality and maintenance of the community assets generated (Devereux & Guenther, 2007; Shuka, 2012).

The PSNP is complemented by a series of food security activities, collectively referred to as Other Food Security Programme (OFSP). The OFSP was replaced by the Household Asset Building Programme (HABP) in 2011. The OFSP and HABP were designed to encourage households to increase their income from agricultural activities and to build up assets by means of access to credit, agricultural extension services and technology transfer.

Impact evaluations

A number of quasi-experimental impact evaluations of the PSNP have been conducted since its launch (see e.g. Andersson et al., 2011; Berhane, Gilligan, Hoddinott, Kumar, & Taffesse, 2014; Gilligan et al., 2009; Hoddinott et al., 2012). These studies have tended to concentrate on the effects on food security, assets and agricultural output in line with the programme objectives. No studies of the wage or employment effects have been performed yet.

13 The direct support component provides for a direct income transfer to households without able-bodies labourers. The PW component is the larger of the two.

14 An assessment by Devereux et al. (2008) reported between 17 to 20 days of employment in 2008.

Gilligan et al. (2009) assessed the programme's short-term effect (i.e. after 18 months) and found that it had had little impact on food security and assets due to low transfers. However, households that had benefited from the PSNP and agricultural support at the same time were found to be more likely to be food-secure, borrow, use agricultural technologies and operate non-farm businesses, although they did not show faster asset growth.

Hoddinott et al. (2012) produced similar findings, one of which was that the PSNP alone did not have any effect on agricultural input use or productivity. Only when the PSNP was used in combination with the OFSP/HABP were any improvements recorded in fertiliser use, investment and agricultural cereal production. High levels of transfers in the PSNP programme alone had no effect on agricultural input use or productivity, and a limited impact on agricultural investments. These findings have major implications for the design of safety-net programmes and for the optimum mix of income transfers and productivity enhancing investments.

Berhane et al. (2014) showed that the duration of support matters for asset accumulation. Beneficiaries produce livestock improvements only after five years of programme participation (i.e. an improvement by 0.387 tropical livestock units (TLU)[15]). Again, a more noticeable effect on asset accumulation (0.55 TLU) was observed when the programme was combined with complementary programmes, i.e. the OFSP or the HABP. Similarly, Andersson et al. (2011) found that the PSNP did not affect livestock accumulation in the short to medium term, but noted improvements in forest assets in the form of trees planted thanks to the programme.

15 Tropical livestock units are livestock numbers converted to a common unit (in 2005). 0.387 is equivalent to two pigs or almost four goats.

Appendix 6: Mahatma Gandhi National Rural Employment Guarantee Act (India)

General description

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was passed in 2005, and entitles every household in rural areas of India to up to 100 days of work per year at state minimum wages. The MGNREGA was first implemented in 200 districts of India in 2006, and was subsequently extended to all other rural districts. Implementation had been completed by 2008.

The programme's objectives are to ensure social protection for the most vulnerable, to ensure livelihood security and to strengthen drought-proofing and flood management, to empower marginalised communities, to strengthen decentralised, participatory planning, to deepen democracy at the grass roots and to enhance transparency and accountability in governance (MoRD, 2012).

Although targeted at rural areas, the scheme is otherwise universal: every household living in rural areas is entitled to a MGNREGA jobcard irrespective of its income. Wage levels were fixed at the state minimum wage, which is higher than the market wage, such that the self-targeting mechanism is not as effective as it could be. Still, use of the MGNREGA is generally confined to the poorer segments of the population (Imbert & Papp, 2015; Murgai et al., 2015). The scale of implementation varies substantially across states. The national average participation rate, i.e. the share of rural households using the MGNREGA scheme, was 24.9% in 2009-10. However, this average is based on wide extremes: 5% in the worst performing states (Haryana and Punjab) and 62% in the best performing state (Rajasthan).[16] The average number of person-days per participant was 27 in 2011-12, but again this average was based on a wide range, starting at 15 days per participant (Karnataka) and climbing to 76 days per participant (Mizoram).[17] Given these disparities, it is not surprising that there were reports of substantial rationing of employment under the MGNREGA in several states (Dutta, Murgai, Ravallion, & van de Walle, 2012).

The MGNREGA is a demand-based programme. The law gives participating households a number of rights. For example, employment has to be provided within 14 days of an application for work, within a 5km radius of the village in question (otherwise unemployment allowances or a compensation for transportation costs have to be paid); all work sites have to provide drinking water and medical aid; and childcare facilities must be made available if there are more than five children at a work site (MoRD, 2013).

Governance aspects

Under the MGNREGA, all levels of government have different responsibilities for the implementation of the scheme. Central government enacted the law, releases and revises operational guidelines (including a list of permissible works) and bears most of the financial burden. State governments are required to contribute 25% of material costs and to pay unemployment allowances. The state governments are responsible for the implementation of the PW programme: they set up an implementing agency, are responsible for budget provision and release, and for accountability and transparency (MoRD, 2013). Finally, the lowest tier of government, i.e. the panchayat, is responsible for project planning and implementation. Projects are planned at village assemblies (Gram Sabha) and need to be approved by the village council (MoRD, 2012). The financial value of the programme was INR 373 billion (USD 7.1 billion) in the 2011-12 financial year, representing 0.4% of GDP and 3.8% of government spending.

Technical aspects

Most works take place during agricultural lean seasons so as to minimise the effects on agricultural output and agricultural wages (MoRD, 2012). Infrastructure creation focuses on improving transportation infrastructure and on increasing agricultural productivity. In the 2013-14 FY, 42% of total expenditure was on rural connectivity works (mainly road construction). 20% of spending was targeted at land development works, another 20% at flood control and protection. 18% of funds were invested in water-related works, i.e. the renovation of water bodies, minor irrigation projects and water conservation and harvesting projects.[18]

16 Data extracted from Dutta, Murgai, Ravallion, and van de Walle (2012).

17 MGNREGA Public Data Portal, accessible online at: www.nrega.nic.in.

18 These figures are taken from the official MGNREGA website (http://nrega.nic.in).

The labour-to-material ratio is not supposed to fall below 60:40. So as to combat corruption, contractors are not allowed to be involved and wage payments must be made electronically. Although the scheme provides for social audits and grievance redressal mechanisms in order to raise transparency and accountability, these are not used everywhere (MoRD, 2012).

Impact evaluations

A comprehensive evaluation was not envisaged when the MGNREGA was first launched. However, a large number of studies have used quasi-experimental research methods to analyse different effects of the scheme (Berg et al., 2014; Bhargava, 2014; Gehrke, 2014; Imbert & Papp, 2015; Zimmermann, 2014).

Imbert and Papp (2015) and Berg et al. (2014) looked at the wage effects. They found that the programme led to an increase in wages for casual agricultural work, and that both participants and poor non-participants benefited from the programme (through income gains). However, Imbert and Papp (2015) also found a simultaneous fall in private employment. Zimmermann (2014) found some evidence that households with access to the MGNREGA were more likely to engage in entrepreneurial activities, which she considered riskier than wage employment.

Bhargava (2014) looked at the effects of the MGNREGA scheme on technology adoption in agriculture and argued that higher wage costs in agriculture led to a shift towards more capital-intensive production, particularly for small farmers and low-powered technologies.

Gehrke (2014) also analysed the effects on households' agricultural output choices. She found that households with access to the MGNREGA were more likely to plant riskier and more lucrative crops and concluded that the programme was capable of substantially boosting agricultural productivity thanks to this mechanism.

Appendix 7: National Programme for Community Empowerment (Indonesia)

General description

The National Programme for Community Empowerment (PNPM) was launched in 2007. The PNPM is the largest community-driven development programme in Indonesia and consists of 12 community empowerment-based poverty alleviation programmes. The largest programmes, i.e. the Rural PNPM and the Urban PNPM, have been in force since 1998 and 1999 respectively (Secretariat of the National Team for the Acceleration of Poverty Reduction, 2015).

The community-centred approach is intended to improve social stability, create job opportunities, improve regional governance and create assets for the underprivileged. The PNPM is characterised by:

- the use of a community participation approach;
- community institutional capacity enforcement;
- programme activities managed by communities.

The rural component of the PNPM has created more than 107.2 million work days involving over 9.9 million workers employed in labour-intensive works (3.6% of the population). The average duration of employment per person is 11 days.

Governance aspects

The PNPM is implemented under the aegis of the Secretariat of the National Team for the Acceleration of Poverty Reduction. A budget of IDR 7.8 billion (equivalent to USD 550 million or 0.6% of GDP) was allocated to the Rural PNPM in 2013.

Technical aspects

The PNPM allocates community grants and technical assistance to a community-led process of programme selection and implementation. PNPM activities are performed by self-managing communities, with the support of facilitators or consultants. The communities are also responsible for physical, financial and administrative activities, and work administration.

The infrastructure generated under the programme consists mainly of roads, irrigation systems, clean water systems and village electricity. A total of 68,821 km of rural roads and 6,527 irrigation systems were built between 2008 and 2011 (Secretariat of the National Team for the Acceleration of Poverty Reduction, 2014). We were not able to obtain detailed information on the labour intensity of these projects.

Impact evaluations

No impact evaluation has been conducted to date. A qualitative assessment performed in West Java showed that irrigation channels led farmers to plant two or three rice crops per year, as water was now available during the dry season. This resulted in a 50% increase in the output of unhulled rice (World Bank, 2012). The government estimates that the Rural PNPM lifted more than 500,000 households out of poverty, and that 300,000 previously unemployed people are now in employment. The overall estimate is that unemployment has declined by 1.5% since programme was launched. The community-based approach to programme implementation has also been assessed to be cost-efficient, with 85% of the physical infrastructure developed under the programme deemed of good or very good quality and the average cost of the infrastructure around 15-20% lower than the cost of infrastructure-contracting services (Secretariat of the National Team for the Acceleration of Poverty Reduction, 2014).

Appendix 8: Cash for Work Temporary Employment Project (Liberia)

General description

The Cash for Work Temporary Employment Project (CfWTEP) was initiated by the government of Liberia and the World Bank in response to the 2007-2008 food crisis in Liberia. The aim of the CfWTEP was to mitigate the short-term effects of the food crisis by creating 680,000 days of temporary employment for 17,000 vulnerable households (2.5% of all households in Liberia). The daily wage was USD 3 and was paid for 40 days of work, thus totalling USD 120. With wages in other government programmes set at USD 3, the government also set the CfWTEP wages at this above-market rate. A combination of targeting methods was employed to identify the beneficiary population. The number of projects assigned to each county was based on food vulnerability criteria. Communities then managed beneficiary selection with a focus on gender balancing.

Governance aspects

Responsibility for the implementation of the CfWTEP was entrusted to the Liberia Agency for Community Empowerment (LACE). This agency seeks to improve the living standards of poor communities by providing basic social services and promotes a community-based approach to sub-project identification, preparation and implementation, administration and maintenance. LACE is a not-for-profit autonomous organisation but is accountable to the President of the Republic. The CfWTEP was allocated a total project budget of USD 3 million (2.5% of GDP). During the course of the CfWTEP, LACE oversaw the implementation of 34 sub-projects in 15 counties with 500 beneficiaries each. The sub-projects were coordinated by local non-governmental or community-based organisations.

Technical aspects

The project activities conducted under the programme were deliberately labour-intensive. In rural areas, most activities involved roadside cleaning and clearing, the backfilling of potholes and the clearing of communal agricultural lands. In urban areas, PW activities were limited to street sweeping, drainage clearance, painting of public buildings and street walls, rehabilitation of schools, health posts and other community buildings. Wages accounted for 70.7% of aggregate expenditure.

Payments were made through a commercial bank (Ecobank, which has a high penetration throughout the country), either on a monthly basis or in the form of mobile payments. Daily attendance, the completion of payroll sheets, and beneficiary ID cards were critical to prevent the leakage of funds (Andrews et al., 2011).

Impact evaluations

There is limited empirical evidence on programme performance. Wodon (2012) assessed the direct effects of the programme, concentrating on the targeting performance, wage substitution and wage-use patterns, and did not find any evidence of labour substitution away from the private sector.

Extension

The CfWTEP was extended for a second phase, from 2010 to 2015. The second phase of the programme was named the Liberia Youth Employment Project (YEP). The YEP project is specifically designed to create additional short-term jobs for young people. It also finances demand-driven skills development programmes serving the informal and formal economy, and lays the foundations for a stronger, demand-driven institutional framework for technical and vocational education and training. Impact evaluation evidence on the second phase of the programme is still pending.

Appendix 9: Malawi Social Action Fund Public Works Programme (Malawi)

General description

The Malawi Social Action Fund Public Works Programme (MASAF PWP) has been operational since the mid-1990s. It is intended to provide short-term employment for poor, able-bodied individuals with the ultimate objective of enhancing food security by raising farm inputs at the time of planting. The programme therefore ties in with Malawi's large-scale fertiliser input programme (FISP). It was expanded and amended in 2012 in response to a major currency devaluation. The programme provides employment at a daily wage rate of MWK 300 (USD 0.90) per person. It offers 48 days of employment divided over two 24-day cycles.[19] The first cycle takes place during the planting season, i.e. October to December, and is aligned with the timing of the distribution of the FISP. The second cycle takes place during the harvest season, i.e. May-July.

The MASAF PWP is a national programme covering all the districts in the country. The beneficiaries are selected with the aid of a combination of community-based targeting and self-selection. The programme covers some 250,000 households per year (7% of the households in Malawi).

Governance aspects

The PW programme falls under the overall responsibility of the Malawi Social Action Fund (MASAF). The MASAF is a not-for-profit organisation reporting to the government. It was designed as a platform for implementing multi-sectoral community-driven development interventions in education, health, water, transport, communications, natural resources, energy, agriculture, irrigation and community services. The MASAF is financed by the government of Malawi and a number of donors including the World Bank. Annual costs amount to around 1% of GDP.

Implementation of the PW component is decentralised. The funds allocated to a district are in proportion to population size and poverty rates, as well as a number of vulnerability measures. Within districts, district officials target a sub-set of extension planning areas based on poverty and vulnerability criteria. Funds are then allocated to group village headmen, who decide how many households participate in each village, based on the available funding, and select the participating households in collaboration with village committees.

Technical aspects

The MASAF PWP does not follow the traditional PW method of allocating work during the lean season in order to allow for consumption smoothing. Instead, it seeks to improve household production, concentrating activities during the planting months in the main agricultural season, when the FISP is also distributed. The reasoning behind this is that the PWP enables poor, credit-constrained households to buy productive inputs conditional on their participating in the FISP.

The MASAF PWP takes a demand-driven approach, with community involvement for project identification. A total of 18,736 projects had been performed during the period until December 2012. Over 50% of the PW projects were road rehabilitation (77,741 km), followed by irrigation (3,678 ha irrigated), and the construction of classrooms and public toilets. Up to December 2013, the programme provided a total of 19 million days' work to 1.6 million beneficiaries, representing an average duration of employment of 12 days. We were not able to obtain detailed data on capital-labour ratios. Apart from the link with the FISP, the programme does not provide other complementary services.

Impact evaluations

Past studies on the MASAF PWP highlighted the challenges of rigorously assessing the programme impact (Chirwa, Mvula, & Dulani, 2004). A randomised control trial was held in 2012-13. The resulting evaluation showed that, thanks to the link with the FISP, households were more likely to receive fertiliser coupons and hence pay less for fertiliser (Beegle et al., 2014). However, there was no evidence that they applied more fertiliser. Similarly, the authors found no evidence that the households concerned enjoyed better food security in the lean season.

19 Prior to 2012, the project duration was 12 days.

Appendix 10: Karnali Employment Programme (Nepal)

General description

The Karnali Employment Programme (KEP) was launched in 2006 and operated only in the five districts of Nepal's Karnali region. The Karnali region is the country's most marginalised and underprivileged region. The KEP was developed by the government in response to an active Karnali lobby that urged the government to make a range of development interventions when the Nepalese civil war came to an end.

The KEP is designed to provide 100 days of work to participating households on a yearly ongoing basis, rather than one-off support for a limited period. The programme is targeted at households without any formally employed member (around 60,000, i.e. 95% of all households in Karnali).

The mean daily wage rate paid under the KEP is NR 200 (USD 1.8), which is lower than both the market wage and the statutory minimum wage rate (Nepal National Planning Commission, 2012). The programme has fallen short of achieving its overall objective of providing 100 days of employment. The average number of days of employment created in the five Karnali districts ranged between 10 to 15 in 2011 (Harris, McCord, & Sony, 2013; see also Vaidya, Regmi, & Ghimire, 2010, for similar figures from earlier years).

The KEP was extended beyond Karnali in 2011, to four adjoining low-development districts. The KEP is currently being redesigned, with technical support from DFID. The redesign aims to set new standards in both implementation and impact through both short-term and long-term support for improved infrastructure and skills development. The technical assistance and redesign started in September 2013 and is expected to be completed by 2016.

Governance aspects

The KEP is implemented under the aegis of the Ministry of Federal Affairs and Local Development, with infrastructure projects designed and implemented at local level. The KEP was initially allocated a budget of NR 180 million (USD 1.7 million) in 2006. This was raised to NR 225 million (USD 2.1 million) and NR 250 million (USD 2.5 million, 1.3% of GDP) in 2010 and 2011 respectively. The budget allocated to the KEP has not been commensurate with the objective of providing 100 days' employment to eligible households. Hence the average support provided falls short of this objective.

Technical aspects

The projects implemented as part of the KEP were initially intended to take place in the agricultural lean season. However, due to delays in project design and selection, most of the projects ended up being operational during the agricultural season from April to October (Nepal National Planning Commission, 2012).

With only two of the five districts in Karnali connected to the road network, the vast majority of projects are related to road construction. Other activities have included the construction of bridges and schools, as well as works involving irrigation and the drinking water supply (Nepal National Planning Commission, 2012; Vaidya et al., 2010). Wage costs relating to infrastructure projects account for 78% of total expenditure (Nepal National Planning Commission, 2012).

Impact evaluations

No impact evaluation using a randomised control trial or quasi-experimental methods has been conducted to date. However, the Government reviewed the programme in 2012, based on administrative records and cross-sectional data from a field survey in 2011. The findings suggested that the KEP has not altered food expenditure but has marginally increased spending on health. 20% of beneficiary households reported having used KEP funds to invest in animals, land, agricultural tools or mobile phones (Nepal National Planning Commission, 2012). While there is no hard evidence of the productive effects of these investments, they are expected to have positive effects in the future. With respect to the indirect benefits of the infrastructure generated under the programme, 80% of beneficiaries reported that they had benefited from the construction of roads, claiming that they had saved 0.7 days a week thanks to better transport (Nepal National Planning Commission, 2012).

Redesign

The project is currently being redesigned. A revised model for the delivery of the KEP has been tested in four 'Centre of Excellence' projects. Communication campaigns have been mounted to disseminate information on benefits, responsibilities and processes. Beneficiary targeting has been revised using a combination of self-targeting and community selection based on easily verifiable poverty correlates such as household size, disability and asset ownership. Job cards have been distributed to each beneficiary, thus allowing entitlements to be tracked, and wages are now paid fortnightly at work sites directly, without the use of any intermediaries so as to reduce payment arrears. Toilets, child-care facilities and safety equipment are now provided on-site and workers are insured against accidents, with one person per site trained in first aid. Following amendments to project selection and implementation, the average number of days of employment has risen to 53 (Oxford Policy Management, 2014).

Appendix 11: Vision 2020 Umurenge Programme (Rwanda)

General description

The Vision 2020 Umurenge Program (VUP) was initiated by the government of Rwanda in 2008 as one of three flagship programmes of its Economic Development and Poverty Reduction Strategy (EDPRS I, 2008-2013). Rather than involving a myriad of interventions, the VUP was designed as a more comprehensive social protection intervention with the aim of accelerating poverty reduction and helping to meet the country's long-term poverty objective as presented in Vision 2020. After the end of the initial programme period, the programme was recently extended under the EDPRS II (2013-2018).[20]

Implementation of the VUP began in 2008 in 30 poor sectors (sub-districts), one per district. The programme area gradually expanded in the following years, reaching 240 out of a total of 416 sectors by 2015. The VUP takes a community-based targeting approach to identify the beneficiary population. The poverty category and thus eligibility for the programme are not permanent, and are reassessed at regular intervals.[21]

As a social protection intervention, the VUP consists of three key components one of which is PW.[22] The PW component offers short-term employment on community infrastructure projects to extremely poor households that have at least one able-bodied adult member. The daily wage paid for PW is set at sector level, at a rate no higher than the local market wage for unskilled labourers. The wage rate rose from RWF 800 (USD 1) in 2008 to RWF 1,000 (USD 1.3) in 2010, and further to RWF 1,200 (USD 1.6) by 2014. Studies of the efficiency of wage-setting have shown that, contrary to the original intention, VUP wages are higher than the market wage (Gatsinzi, 2012).[23]

Some 104,000 households (6% of households in Rwanda) benefited from PW in 2013-14. Recent assessments of the targeting of the VUP programme have shown that the PW component targets relatively better-off households. This is largely due to design features. PW wages are transferred directly to beneficiaries' bank accounts on a fortnightly basis. Although this reduces the risk of leakages of programme funds, it does require households to pre-finance two weeks' expenditure, which is a mission impossible for most of the poor. Moreover, factors such as the distance from PW sites, household responsibilities and the type of work offered discriminate against single-person and female-headed households (Hartwig, 2014).

Governance aspects

Implementation of the VUP is decentralised, with project selection and management being handled by the sector and district administration. At central level, the Local Development Agency (formerly the Rwanda Local Development Support Fund), an entity operating under the aegis of the Ministry of Local Government, is responsible for overall coordination and supervision.

The VUP is financed by the government with support from the World Bank, DFID and Unicef. Programme funding was raised after the expansion of the programme. Budgeted expenses for 2014-15 were the equivalent of USD 43 million (0.5% of GDP).

Technical aspects

Like the PSNP, the VUP is intended to create employment opportunities, particularly in the agricultural lean season. However, difficulties in project planning at sector and district levels have resulted in PW projects

20 EDPRS II places more emphasis on the programme's productive role, i.e. employment generation, off-farm productive opportunities and graduation.

21 The original assumption was that the poverty category would be reassessed every year. In practice, recategorisations have been on a two-yearly basis.

22 The two other components are direct support, which involves regular conditional cash transfers to poor households without any labour capacity, and a financial services component consisting of low-interest loans. The three components are accompanied by a fourth, cross-cutting component made up of community training and sensitisation.

23 Around 74% of the rural population earn less than the daily PW wage (Hartwig, 2014).

offering ad-hoc employment. While the VUP was planned to provide at least 69 days of work, the average number of days worked has remained largely unchanged since the start of the programme, ranging between 42 and 48. PW projects initially concentrated on soil improvement measures (i.e. terracing and land rehabilitation). However, the focus shifted in the second and third years of implementation to road construction and water systems. More recently, PW projects have concentrated on the construction of classrooms, latrines and health centres. With the shift in the type of projects and infrastructure generated by PW, the wage component of PW expenditure has fallen from 88% in 2008 to 47% in 2012.

The VUP includes a financial services component, under which individual and group loans are granted to VUP beneficiaries.

Impact evaluations

The M&E framework accompanying the programme does not envisage a rigorous impact evaluation. A number of qualitative and quantitative studies have been commissioned by the development partners supporting the VUP. The most recent quasi-experimental assessment of the VUP showed that the PW component has had a limited impact (Hartwig, 2014). Households are positively affected by the programme in the short run, i.e. during the period in which they receive support, and report positive effects on livestock holding (an average increase of 0.2 TLU). These effects are not sustained, however.

The medium-term effects include an increase in livestock holding (0.3 TLU), but only for those households that benefit continuously from the programme. Households which benefit from the programme for only one period are found to revert to asset levels prior to participation (Hartwig, 2014). The ad-hoc nature of the employment opportunities offered and the limited support in terms of duration prevent households from planning and adjusting their investment behaviour.

Appendix 12: Youth Employment Support Project (Sierra Leone)

General description

The government of Sierra Leone launched the Youth Employment Support Project (YESP) in 2010. It included a labour-intensive PW component known as the 'cash for work programme' (CfW). The CfW is designed to provide additional income and temporary employment to vulnerable young people living in rural areas.

The CfW is targeted at individuals in poor and vulnerable communities, aged from 15 to 35. The wage rate was set lower than the market wage to discourage non-poor people from participating. The daily wage is Leones 7,500 (USD 1.8). Programme participation is not limited in time as long as age eligibility continues to apply. A total of 45,900 people (equivalent to 0.7% of the population) had benefited from the programme by 2015. The average duration of employment ranges between 50 and 75 days.

Governance aspects

Overall operational responsibility is vested in the National Commission for Social Action (NaCSA), a semi-autonomous government agency. The sub-projects are implemented by independent contractors hired by the NaCSA, who are responsible for the day-to-day management of the sub-projects, including beneficiary payments. The total cost of the programme is equivalent to around 0.1% of GDP.

Technical aspects

Although we were unable to obtain detailed information on the project selection process, the sub-projects implemented to date have consisted mainly of feeder road rehabilitation and maintenance (67%), inland valley swamp rice cultivation (9%), other agricultural projects (13%), and renewable energy and environmental mitigation (11%). On average, 60% of the sub-project costs are allocated to wages, with road sub-projects typically lower in labour intensity (Rosas & Sabarwal, 2015). The CfW component does not provide complementary services.

Impact evaluations

An impact evaluation of the CfW was conducted in 2012, using a randomized phase-in method. This looked only at the short-term effects of the programme, i.e. up to a period of six months. The evaluation concentrated on the income effects and the economic activities performed by households (Rosas & Sabarwal, 2015). It showed that households were more likely to engage in paid work. Participation in the CfW led to a net increase in household labour market participation. The effect was stronger in rural areas and among households whose head had a low level of education. Given the net increase in household economic activity, the authors concluded that the programme was not crowding out the labour supply to the private labour market. In line with the programme's powerful impact on economic activity, it also raised household income by 26%.

With respect to investment, the analysis showed that participating households were 16% more likely to participate in informal saving groups. They also made significantly larger investments in home improvement (33%) and were more likely to invest in small livestock. The programme's most noticeable impact was in terms of new businesses, with participating households being four times more likely to set up a new business as compared with the control households (Rosas & Sabarwal, 2015).

Appendix 13: Cash for Work Programme (Somalia)

General description and governance aspects

Between August and October 2011, the Food and Agricultural Organisation (FAO) undertook a big Cash for Work (CfW) programme in Somalia in response to a famine in the south of the country. The CfW programme was designed to provide immediate cash relief to the poorest while laying the basis for medium-term recovery and rebuilding livelihoods and the infrastructure.

The average CfW wage was USD 72 per household per month, which is equivalent to USD 3 per day. It covered the cost of the minimum basic food basket in 2011 (FAO Office of Evaluation, 2013). Taking account of the undernourished state of the people, the FAO reduced participants' workloads by one third and provided two weeks' cash advances at the same time, so that they could buy food immediately.[24] Since the target was to achieve at least 30% female participation in the work programme, a number of complementary measures were taken, including child-care facilities and flexible working hours for women, enabling them to work at times that did not overlap with men.

As of August 2011, the programme was operating in eight regions in South Somalia and covered 130,000 households (780,000 people, 7.4% of the population). It had a planned budget of USD 25 million. The operating costs for the period from August to October 2011 represented 2.7% of GDP (FAO Office of Evaluation, 2013).

Technical aspects

The small-scale rehabilitation or infrastructure projects were decided by the community. Given the climatic conditions, most infrastructure projects consisted of canal rehabilitation, water catchment creation, bush clearing and road construction.25 Since Somalia has a widespread network of trustworthy money-lenders, cash payments to beneficiaries were made using this network. Payment vouchers were used so that implementing NGOs did not need to handle cash payments for beneficiaries. The vouchers had serial numbers and the NGO concerned gave the voucher number to the money-lender as a pay slip against which the beneficiary's voucher was verified before payment was made. The FAO then reimbursed the money-lenders for the value of the vouchers they had collected. The programme employed 20 field-based monitoring officers to keep track of implementation. Beneficiary surveys were used to verify the selection criteria for participating households. Cash receipt and use were verified with the aid of post-distribution phone calls. Post-project review questionnaires were used to measure the effects of higher purchasing power and the rehabilitated infrastructure. The CfW did not provide any complementary services.

Impact evaluations

An assessment based on information obtained from seven villages was conducted by the FAO's Office of Evaluation in October and November 2012. The study did not use randomised or quasi-experimental methods, but was based on individual and group interviews (FAO Office of Evaluation, 2013). The study found an increase in agricultural output, which was attributed to the rehabilitated infrastructure and to a reduction in harmful coping strategies prompted by the crisis. Wages were invested productively, though the impact was not sustained or widespread. Multiplier effects on the village economy were common though short-lived. Infrastructures were appreciated for their longer term benefits, though choice of asset and technical specifications were often questioned, and infrastructures were found to have variable and not always positive effects on different groups. Particularly in pastoralist areas, PW interventions to improve access to drinking water, irrigation and drainage led to conflicts about rights of use and local water levels (FAO Office of Evaluation, 2013).

24 The FAO monitored market prices on a weekly basis to check for potential price rises.

25 We were unable to obtain detailed information on the projects' cost-effectiveness and capital-labour ratios.

Appendix 14: Building Resilience through Asset Creation and Enhancement (South Sudan)

General description

The Building Resilience through Asset Creation and Enhancement (BRACE) programme is a very recently launched programme whose implementation did not start until 2012. The programme provides food and cash to households in return for work, while building skills, physical assets and knowledge. Its aim is to strengthen household and community resilience. The programme is implemented by the World Food Programme (WFP) and NGO partners in three of the ten states in South Sudan. The states are selected on the basis of a high incidence of poverty, a large number of returnees, population density, high levels of food insecurity, relative security and agricultural potential.

BRACE is being implemented in two phases. The first phase was rolled out in 11 counties across the three states. A further three counties were included in the second phase, which started in 2013. In total BRACE aims to support 50,000 households across the three states.

Governance aspects

BRACE is coordinated by the WFP with support from DFID. A budget of USD 21 million (0.1% of GDP) was allocated to the initial two-year phase.

Impact evaluations

The impact of BRACE was evaluated with the aid of a quasi-experimental approach, in which communities participating in the food-for-asset activities were compared with those that were not. The focus was on food security and resilience. Baseline reports and data were produced in 2013. Baseline data were gathered in phase I and II sites from January to June 2013. Mid-term data followed in 2014 with end-line data collection planned for 2015. However, findings from the baseline, mid-term or end-line data collection have not yet been published.

Appendix 15: Extended Public Works Programme (South Africa)

General description

The EPWP was launched in 2004 in response to high levels of unemployment and the resultant high level of poverty in South Africa.[26]

The aim of the EPWP is to provide poverty and income relief through temporary work for the unemployed, who would be required to perform socially useful activities. EPWP projects are designed to equip participants with a modicum of training and work experience, which should enhance their future ability to earn a living. The areas covered by training include basic adult education, HIV/AIDS awareness, health and safety, social enterprise, industrial relations, vocational skills, life skills, business skills, project management, community development and co-operatives.

The EPWP provides work opportunities in four sectors: government-funded infrastructure projects, public environmental programmes, public social programmes (e.g. community care) and NGO and community development projects. EPWP projects are selected by public bodies and implemented by contractors in accordance with the guidelines of the public body, i.e. based on a labour-intensive approach. The idea is that the rate of pay must be comparable to that paid for unskilled work in the local area, but not higher than the average local rate. This is to ensure that beneficiaries are not recruited away from other employment with longer-term prospects. Wage discrimination on the basis of gender, disability or age is not allowed.

The objective of the first phase of the programme was to create at least one million work opportunities within five years. This target was achieved ahead of time. However, because unemployment was still high, the EPWP was extended for a second phase in 2009, when a new target of 4.5 million work opportunities was set. The third phase of the programme, which aims to provide a total of six million work opportunities over five years, was launched in 2014. The EPWP benefited 350.000 people (0.7% of the population) in 2014.

Governance aspects

The Department of Public Works is responsible for the overall coordination, monitoring and evaluation of the EPWP. Sector-coordinating departments, committees for the environment, social and infrastructure sectors and the EPWP steering committees are responsible for project selection and management at provincial level.

The EPWP is funded through the government's normal budgeting process, with grants earmarked for the respective departments, provinces and municipalities. While the decentralised approach poses certain challenges, particularly with respect to coordination, it allows for better access to funds and a longer-term focus in fund management (Government of South Africa, 2010). The total cost of the programme was estimated at 0.7% of GDP in 2014.

Technical aspects

The work opportunities created depend on availability and are not restricted to a particular time of year.

By the end of the second phase, the programme had created 4.1 million work opportunities (90% of the target): 1.7 million in infrastructure. 0.8 million in the environment, 0.9 million in the social sector and 0.7 million in community work and non-profit organisations. The average duration of employment across sectors in the five-year period is 65 days, ranging from 50 in 2009-10 to a high of 75 days in 2010-11. The average duration fell back to 63 in 2013-14. The longest durations are found in the social sector (87, as compared with 67 in infrastructure, for example) (Government of South Africa, 2014).

The average labour intensity during the second phase varied widely across sector and year. The infrastructure sector reported rates of between 6% and 16%; the environmental sector rates of between 9%

26 Around 40% of the working age population were unemployed in 1999. Extra pressure was caused by the extremely high level of youth unemployment (an estimated 70% of young people were unemployed at the time).

and 53%; the social sector rates of between 17% and 58% and the community development sector rates of between 36% and 100%. However, labour intensity increased in all sectors during the second half of phase two of the programme, with the community sector reporting the highest intensities (Government of South Africa, 2014).

Impact evaluations

A monitoring and evaluation (M&E) framework was designed to accompany the EPWP. The M&E framework did not envisage a rigorous impact evaluation. Instead, it reports on project implementation indicators, i.e. work opportunities created, duration and labour intensity. So far, no impact evaluation of the EPWP or any of its components has been performed with the aid of quasi-experimental methods.

McCord (2005) reviewed the labour market situation in South Africa and the training inputs offered under the EPWP during the first phase. Her conclusion was that, while the programme might lead to improved levels of training among participants, this was unlikely to translate into better labour market performance among participants because the formal training offered was not skills-oriented and the job training tended to be low-skilled. She concluded that the work experience was unlikely to lead to higher levels of employment, due to the lack of demand for low-skilled and unskilled labour in the economy (McCord, 2005).

Appendix 16: Labour-Intensive Works Programme (Yemen)

General description

The Labour-Intensive Works Programme (LIWP) was implemented in Yemen in 2008 in response to the financial, food and fuel crisis. In its initial set-up, the programme had both a short-term and a long-term component. The short-term component provided participants with support for just four to six months. The long-term component guaranteed participants a minimum amount of work for three to five years, and works very much like an employment guarantee scheme. The government was planning to concentrate on this second component after the end of the first phase, which lasted from 2008 to 2011. However, these plans were postponed in the wake of the Arab Spring and resultant crisis, and the coverage of the short-term component was then substantially extended. Since 2013, the LIWP has also included capacity-building and skills development elements, particularly education and nutrition-related services.

Under the LIWP, communities are selected on the basis of village-level poverty indicators and field verification. Within the selected communities, the LIWP is designed to reach poor households by means of self-targeting, by setting wages lower than the prevailing local wage for unskilled work.

The LIWP allocates work days equally across households, with an upper limit of USD 700 (in terms of the benefit obtained) or approximately 115 working days per year. However, both household survey and administrative data suggest there is a wide variety in working days, with the majority of households working 50 days or fewer (Christian et al., 2013). About 22,000 households (around 6.5% of all Yemeni households) benefited from the LIWP (Lieuw-Kie-Song, 2014) in 2011.

Governance aspects

The Social Fund for Development (SFD) is the entity that is responsible for implementing the LIWP. The SFD was set up by the government of Yemen in 1997 to support its national social and economic development plans for poverty reduction. The LIWP is financed jointly by the government of Yemen, the World Bank, DFID, the European Commission, the Dutch Ministry of Development Cooperation and the German Development Bank (KfW). The second phase of the programme in 2010-11 cost roughly USD 23.4 million (0.8% of GDP). LIWP projects are chosen by targeted communities in consultation with SFD technical staff.

Technical aspects

LIWP projects focus mainly on reducing water scarcity. Projects have included the rehabilitation of agricultural land, the protection of irrigation canals and water sources, rural road improvements, the construction of shallow wells and terrace repairs. The objective is to provide work during shocks and during the agricultural lean season. Wages accounted for 75% of aggregate expenditure on the LIWP in 2011, and for 83% of expenditure in 2012 (Lieuw-Kie-Song, 2014). The LIWP does not provide any complementary services.

Impact evaluations

A randomised evaluation of the LIWP was conducted by Christian et al. (2013). The study generated information on the employment effects and asset accumulation. It also constituted a first attempt to assess the contribution of the public goods generated by the PW programme. Focusing on the short-term effects, the authors found that the LIWP did not substitute alternative employment. Rather, the total number of days worked increased thanks to the employment provided by the programme. The authors also found that, due to the crisis, LIWP wages ended up being higher than the market wage, so that the programme also had the effect of raising the average wage. By providing additional days' work at a good wage, the LIWP protected wage income from the negative effects of the crisis.

The authors did not find any evidence of the decapitalisation of assets due to the crisis. Rather, the programme had a strong positive effect, increasing the durable ownership of goods (notably of motorised vehicles) by USD 146. Evidence of the returns from the infrastructure generated was more limited, since the vast majority of projects were still incomplete at the time of the study. Nevertheless, 95% of the respondents

said that the project was beneficial to the community as a whole. 80% said that they benefited directly from the projects.

Impact estimates of the usefulness of the infrastructure generated show that, in villages with poor access to water, the LIWP reduced the average length of the trip to fetch water during the rainy season by 9 to 18 minutes. In addition, the improved access to water resulted in 1-2 fewer months of water shortage per year, i.e. a 50% decrease compared with the average water shortage of 3-4 months (Christian et al., 2013).

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