



Do Public Works Programmes Work?

A systematic review of the evidence from programmes in low and lower-middle income countries in Africa and the MENA region

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Executive summary

Under the term 'public works' and similar terms, a wide range of interventions are lumped together that share certain common objectives but differ in terms of their prioritisation, exact programme design, and mode of implementation. In practical terms, they all 'entail ... the payment of a wage (in cash or in kind) by the state, or an agent acting on its behalf, in return for the provision of labour' (McCord 2012a, p. 8).

In a nutshell, public works programmes (PWP) are expected to yield positive impacts through three main vectors: first, through the wage that is paid to those working on a public works site and that may have a more or less effective insurance function; second, through the productive assets created, which are intended to benefit the wider community or a more specific group; and third, through the skills learned by participants that improve their employability or their capabilities to boost income from self-employment.

To reflect the heterogeneity of PWP, a **typology** is employed herein that differentiates between programmes with a short-term focus (Type 1) and programmes with a medium- to long-term focus (Type 2). The key difference between the two Types is the duration, continuity and predictability of the employment offered to individual beneficiaries. If the employment offered is accompanied with complementary measures (e.g. with training or access to credit or extension services), the programme is classified as Type 1 Plus or Type 2 Plus respectively. In this review, this typology is used to **address the following set of research questions**:

1. What are the impacts of PWP by programme type?

2. What is the relative importance of the wage, asset and skills vector in shaping the aggregate impacts?

3. What can be inferred with respect to the role that different design features play in enhancing or undermining impacts?

This study's main contribution lies in its exclusive focus on what can be inferred from the rigorous (quasi-) experimental evidence currently available. We limit the review to studies from low-income and lower-middle-income countries in Africa and the MENA region. Type 1 (Plus) and Type 2 (Plus) programmes are considered on the proviso that they are targeted at the poor and vulnerable and, hence, have an explicit social protection objective.

To find all the studies meeting these criteria, a rigorous search method was employed, which consisted of screening electronic databases, relevant websites and key journals, snowballing references in the literature and contacting key researchers and experts. By the end of this process, 28 studies from seven countries had been identified. However, all but six of the studies were from Ethiopia and just one was from outside of sub-Saharan Africa. The other African studies were from Côte d'Ivoire, Ghana, Malawi, Sierra Leone and Rwanda. There are no robust studies from countries in North Africa and only one is from the Middle East, namely from Yemen. With the exception those on Ethiopia's Productive Safety Net Programme (PSNP), all the studies analysed herein cover Type 1 (Plus) programmes.

In terms of outcomes, findings in the following areas are reported: income, consumption and expenditure; labour supply; food security; nutrition; (productive and non-productive) asset holdings; agricultural production and technology adoption; and education.¹ **The main results from synthesising the evidence by outcome area** are as follows:

• **Income, (non-food) consumption and expenditure**

Three of the five studies with the most positive results for income, consumption and expenditure concern Type 1 PWP (from Côte d'Ivoire, Ethiopia and

1 | The results for additional outcome areas are available upon request.

Sierra Leone) where impacts were measured over the short term. To date, none of the studies conducted on the PSNP provides convincing and robust empirical evidence that a cash-based Type 2 or Type 2 Plus PWP programme can sustainably boost the total income, expenditure or (non-food) consumption of beneficiary households.

• Labour supply

To date, there is no robust empirical evidence that a PWP of any Type generates sustainable employment over and above the public works employment itself in the medium- to long-term. In other words, further down the line, beneficiaries are no more likely to work in a wage job or to engage in self-employment than are non-beneficiaries. This is consistent with the findings on PWP's impacts on income, consumption and expenditure. At the same time, there are no strong indications that crowding-out effects are arising – i.e. that the provision of jobs through public works is replacing other economic activities of beneficiary households.

• Food consumption and food security

The overall picture of food consumption and food security from Ethiopia's Type 2 (Plus) PSNP, especially from its Type 2 Plus variant, is positive, whereas it is inconclusive for the Type 1 PWPs in the other countries (Ghana, Malawi, Rwanda and Sierra Leone). It cannot therefore be taken for granted that Type 1 programmes effectively enable food security, even though in quite a few cases they do at least lead to increased food consumption.

• Nutrition

Overall, the findings on the **anthropometric outcomes** from Ethiopia's PSNP (Type 2) are inconclusive, irrespective of whether one measures acute undernutrition or chronic undernutrition. None of the few studies that report **dietary diversity** outcomes, irrespective of programme type (Type 1 or Type 2) and country (Ethiopia, Malawi and Yemen), finds statistically significant effects.

• Asset holdings

While the evidence is not consistently positive with respect to asset accumulation, the **Type 2 Plus** var-

iant in Ethiopia does seem to outperform the other variants, especially in terms of livestock assets. However, no robust evidence has yet been gathered that sheds light on the question of whether asset accumulation persists beyond the period in which households benefit from the programme. Two of the three evaluations of **Type 1** programmes outside Ethiopia (from Rwanda and Sierra Leone) find increases in livestock ownership in the short term, whereas the third such evaluation (from Yemen) does not. Regarding other kinds of assets, the pattern is inconclusive for Type 1 PWPs.

• Agriculture

When it comes to agricultural technology adoption, the regular **Type 2 Plus** variant of the PSNP performs well overall and outperforms the regular **Type 2** variant (especially with respect to fertiliser use and the adoption of stone terracing and fencing). However, this does not in all cases translate into tangible increases in agricultural production. In fact, surprisingly, the best performers are some of the programme variants that performed worst in terms of agricultural technology adoption. There are no indications that the **Type 2** variant has noteworthy effects on agricultural technology adoption or agricultural production. In the context of **Type 1** programmes, agricultural technology adoption has been hardly investigated and agricultural production is considered in just one study. While there are some positive trends, overall there is not enough evidence that would point towards a widespread increase.

• Education

While there are no strong indications of any of the programme types delivering widespread improvements in education outcomes, there are some encouraging findings from the analysis of the **Type 2** variant of the PSNP, especially when these findings are compared to the evidence on **Type 1** programmes. Although there is insufficient evidence regarding the educational outcomes of the **Type 2 Plus** variant, the findings of the sole study with a focus on this particular outcome do not suggest that it performs better than the Type 2 variant.

In short, the findings both overall and in most outcome areas are quite heterogeneous. This being the case, the assumed benefits of PWPs can by no means be taken for granted, even with respect to the limited objective of enabling consumption smoothing. Indeed, for all the outcome areas investigated in this report that are expected to be positively influenced by PWPs, there are in each case some studies indicating that this expectation has been realised and some that it has not. Yet, for all the outcome areas, we found at least some programmes that meet their objectives. We take this as evidence not that PWPs are ineffective per se, but rather that they can be effective under certain conditions. These conditions include in particular the PWP's specific design and implementation features.

Regarding **implementation**, it should be noted that compared to regular cash transfers, PWPs are much more demanding administration-wise, which introduces a number of additional potential pipeline breaks. While some of the studies analysed in this report contain information on whether and where implementation fell short, they offer limited rigorous evidence of how this affected impacts.

In addition, differences in the design, especially in the **transfer value**, may also explain some of the differences in observed outcomes. The main assertions regarding the transfer value, which are based on theoretical deliberations and the work of McCord (and others), are as follows:

- The social protection impacts achieved through the transfer of wages depend on the real value of the transfer for the household (i.e. excluding the monetary and non-monetary opportunity costs of PWP participation) in relation to the household poverty gap.
- The total transfer value (wage rate times employment duration) should therefore be commensurate with the programme objectives, the nature, extent and depth of poverty and vulnerability, and the labour market context in the country.
- Implementers must ensure that payments are made regularly as planned and in the planned amounts.

- The purchasing power of wage payments in cash should be monitored regularly and, where it is deemed necessary to achieve programme objectives, should be adjusted.

- If these conditions are not satisfied, impacts remain limited or are eroded.

In a nutshell, the evidence synthesised in this review does not refute these assertions. To the contrary, the absence of statistically significant effects in some of the low-wage PWPs provides suggestive evidence that corroborates several of the above assertions. At the same time, this evidence cannot fully substantiate these assertions as it lacks any example where all these criteria are clearly satisfied. In particular, none of the evaluated PWPs consistently paid a wage that would be considered adequate according to the criteria listed above. We cannot therefore point to robust empirical evidence when claiming that the impacts would be substantially higher and long-lasting if all these criteria were fully met.

With respect to **the question of which PWP model is appropriate in which context**, the main assertions (again based on theoretical deliberations and the work of McCord and others) are as follows:

- Programmes offering low-wage short-term employment (**Type 1**) are only suitable in contexts of acute poverty and to achieve a few basic objectives, such as enabling short-term consumption smoothing.
- In contexts where chronic poverty and underemployment are widespread and persistent throughout the year, having PWPs that pay adequate wages over an extended period (**Type 2**) may enable beneficiaries to (a) accumulate savings and assets that build a certain level of resilience against minor shocks and (b) accumulate assets and make productive investments that are at least sufficient to marginally boost post-PWP income. However, such PWPs are unlikely to reduce poverty on any significant scale and are not a complete substitute for responses to severe (especially covariate) shocks. In order to reach the

poorest and enable them to draw tangible benefits from employment that improve their livelihoods, the targeting mechanism needs to be more sophisticated than a system that relies solely on self-targeting based on low wages.

- If sustainable poverty reduction is the objective, Type 2 Plus models, which offer complementary measures and deliberately capitalise on linkages with other programmes, are the most promising options.

Judged solely on the basis of the robust evidence synthesised in this review, we suggest qualifying these assertions as follows:

- There is indeed no evidence to suggest that **Type 1** PWPs can lead to impacts that go beyond consumption smoothing. However, even this consumption smoothing is not guaranteed, especially if the wages paid are low in relation to the household poverty gap (which is typically the case in countries where chronic poverty and underemployment are widespread and persistent almost year-round).
- The PEJEDEC-THIMO scheme, which was implemented in a (semi-)urban context in Côte d'Ivoire, is the only example of a rigorously evaluated **Type 1 Plus** programme. The scheme offered complementary wage-employment training to some and complementary self-employment training to others. Neither of these two Type 1 Plus variants outperforms the regular Type 1 programme in any meaningful way.
- The findings from the analysis of Ethiopia's PSNP (the only rigorously evaluated Type 2 PWP in the region of interest) indicate that Type 2 PWPs can outperform Type 1 PWPs overall, but not in a consistent and substantial way. While the PSNP performs somewhat better in terms of improving food security and education, the findings are inconclusive regarding asset accumulation and disappointing regarding agricultural outcomes (technology adoption as well as production). In other words, the empirical evidence does not strongly support the assertion that Type 2 PWPs are better than Type 1

PWPs at facilitating asset accumulation and, thus, at putting households on a growth path.

- All in all, the **Type 2 Plus** variant of the PSNP (i.e. plus other food security programmes [OFSPs] or household asset building programmes [HABPs]) does outperform the other PWP types. More precisely, it performs well with respect to food security, asset accumulation (especially of livestock) and agricultural technology adoption. However, there are no strong indications that it generates an increase in income or agricultural output in the medium term. Moreover, no study has yet been published providing robust empirical evidence that a Type 2 Plus programme can sustainably strengthen the livelihoods of beneficiary households well beyond their time on the programme.

- **Additionally**, more research is needed to provide a better understanding of which complementary measures, accompanying a Type 2 PWP, may best facilitate successful graduation out of poverty.

Finally, it is critical to note that the overall cost-effectiveness of PWPs hinges on the **benefits arising from the assets created or services provided**. If substantial benefits are not derived from these sources, PWPs amount to nothing more than inefficient conditional cash transfer programmes that, at best, keep people occupied. Unfortunately, the rigorous evidence that is available largely fails to cover the role of the asset vector in achieving the observed outcomes and does not therefore offer empirical arguments for favouring public works over cash transfer programmes. For the time being, the case for PWPs rests mainly on assumed benefits. More research and thorough evaluations are needed to determine whether public works programmes can work and what design and implementation features are likely to enable them to realise their full potential. This review is a good starting point for this endeavour. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), and the University of Passau are planning a collaborative research project on PWP experiences and experiments in Malawi, the aim of which is to close many of the remaining knowledge gaps.

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Acronyms and Abbreviations

ATT	Average treatment effect on the treated
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung Federal Ministry for Economic Cooperation and Development (Germany)
Consump.	Consumption
DID	Difference-in-difference
Empl.	Employment
Expend.	Expenditure(s)
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Hr(s).	Hour(s)
Inc.	Income
ITT	Intent-to-treat
IV	Instrumental variable
LATE	Local average treatment effect (effect on compliers)
LT	Long-term
MGNREGA	Mahatma Ghandi National Rural Employment Guarantee Act
MT	Medium-term
NNM	Nearest neighbour matching
OLS	Ordinary least squares
PWP	Public works programme
Quasi-exp.	Quasi-experimental
RCT	Randomised control trial
ST	Short-term
Tr,	Training
2SLS	Two-stage least squares
#	Number

1. Introduction

Public works programmes (PWPs) are popular among governments and donors alike in developing countries. According to World Bank estimates, PWPs were run in 30 low-income and 35 lower-middle-income countries in 2014 (2015a, p. 12). Their specific appeal lies in the fact that they are assumed not only to offer direct welfare benefits to the workers on those programmes through employment creation, but also to have a range of other effects with the potential to contribute to both household productivity and broader economic growth. Furthermore, these outcomes may be achieved without giving rise to the concerns around dependency and fiscal unsustainability that cash-transfer-based social protection provokes.

In a nutshell, PWPs are expected to yield positive impacts through three main vectors: first, through the wage that is paid to those working on a public works site and that may have a more or less effective insurance function; second, through the productive assets created, which are intended to benefit the wider community or a more specific group; and third, through the skills learned by participants that improve their employability or their capabilities to boost income from self-employment.

Under the term ‘public works’ and similar terms, a wide range of interventions are lumped together that share certain common objectives but differ in terms of their prioritisation, exact programme design, and mode of implementation. In practical terms, they all ‘entail ... the payment of a wage (in cash or in kind) by the state, or an agent acting on its behalf, in return for the provision of labour’ (McCord 2012a, p.8). Some programmes are quite straightforward (remuneration in exchange for short-term work based on a self-targeting mechanism), while others are fairly complex because they rely on more complicated targeting mechanisms or are linked to complementary measures. To reflect this heterogeneity, a **typology of PWPs** is employed in this study that differentiates between programmes with a short-term focus (Type 1) and programmes with a medium- to long-term focus (Type 2). The key difference between the two Types is the duration, continuity and predictability of the employ-

ment offered to individual beneficiaries. If the employment offered is accompanied with complementary measures (e.g. with training or access to credit or extension services), the programme is classified as Type 1 Plus or Type 2 Plus respectively. Using this typology, we set out to investigate responses to the following set of **research questions**:

1. What are the impacts of PWPs by programme type?

2. What is the relative importance of the wage, asset and skills vectors in shaping the aggregate impacts?

3. What can be inferred with respect to the role that different design features play in enhancing or undermining impacts?

Given their continued popularity among donors and governments, one might expect that the available evidence empirically substantiates the intuitive appeal of PWPs. While a lot of material has been produced on PWPs, including a comprehensive multi-country World Bank report (Subbarao et al. 2013), this does not diminish the fact that robust (quasi-)experimental evidence remains scarce. As Blattman and Ralston put it, ‘for all the money that is spent on these program[me]s, it is shocking how little they have been studied’ (2015, p. ii).

In their attempts to answer these research questions, earlier reviewers drew in their analyses on the small amount of quantitative evidence available and complemented it with qualitative, theoretical, conceptual and operational insights gathered from academics, implementers and other practitioners. While there are arguably merits to this approach, it tends to obscure the extent to which the ensuing (policy) implications of the analysis are grounded in robust empirical evidence or in these other sources of insight. In particular, it cannot be ruled out that, in an attempt to show their own work in a more favourable light, some implementers may present the reality on the ground as more positive than it actually is.

This review’s main contribution lies in its approach to take a step back from the other studies on this theme by focusing exclusively on what can be inferred from the

rigorous (quasi-)experimental evidence that is currently available. Furthermore, we limit the review to studies from low-income and lower-middle-income countries. The argument for doing this is that differences in the administrative capacity of the state and in the level of development of the private sector of the economy limit the extent to which these countries' experiences with PWP can be generalised with those of upper-middle and high-income countries. Geographically, we limit the analysis to Africa and the MENA region. Taken together, this particular income and geographical focus constitutes a more restrictive approach than that adopted for McCord's 2012 publication on public works in sub-Saharan Africa (2012a). While her conceptual work focuses on the entire region, much of her empirical work was conducted in the context of PWPs in South Africa, an upper-middle-income country, and this aspect of her work will therefore not be reflected in the present study. At the same time, we add to her work by considering the most recent wave of studies, especially the insights from Ethiopia's Productive Safety Net Programme (PSNP), a Type 2 (Plus) programme. This matters because the PSNP was dubbed as "perhaps one of the world's most intensely evaluated" PWPs (Subbarao et al. 2013, p. 8). Moreover, we critically engage with the question of the extent to which the Ethiopian experience can be generalised to the wider region (and beyond) and, in so doing, work to ensure that this review is not Ethiopia-centric. Another consequence of the geographical focus of this study is that India's Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) programme – another well-researched programme – is not considered in this review.²

We set the **methodological minimum standards** such that we only included experimental or quasi-experimental studies that provide causal or nearly causal inference in reference to a (statistically constructed) comparable control group. Moreover, in order to be included, statistical significance must be reported in the study and the statistical power must be high enough for there to be a reasonable expectation that small effects in the investigated outcome areas are also captured.³ With respect to the type of PWP included, Type 1 (Plus) and Type 2 (Plus) programmes are considered as long as they are targeted at the poor and vulnerable and, hence, have an explicit social protection objective.

In terms of **outcomes**, we report empirical findings regarding impacts along the full causal chain but do not

cover implementation or process factors unless they can be directly linked to the reported impacts. More precisely, findings on income, consumption and expenditure, labour supply, food security, nutrition, (productive and non-productive) asset holdings, agricultural production and technology adoption, and education are reported. To find all studies meeting these criteria, a rigorous search method was employed, which consisted of screening electronic databases, relevant websites and key journals, snowballing references in the literature and contacting key researchers and experts. By the end of this process, 28 studies from seven countries had been identified. However, all but six of the studies were from Ethiopia and just one was from outside of sub-Saharan Africa. The other African studies were from Côte d'Ivoire, Ghana, Malawi, Sierra Leone and Rwanda. There are no robust studies from countries in North Africa and only one is from the Middle East, namely from Yemen. With the exception of those on Ethiopia's PSNP, all the studies analysed herein cover Type 1 (Plus) programmes.

Another output of the review process is a comprehensive annotated bibliography of studies that cover PWPs from developing countries around the world. This bibliography is available online and lists not only robust impact evaluations but also qualitative studies, less robust studies, conceptual and theoretical papers, and review studies. Also available online is a full summary of the empirical findings of the selected studies, which ensures transparency with regard to how the information was synthesised in this report.⁴

The review is structured as follows: First, the definition of public works and the typology of PWPs employed herein are presented. Second, the theory of change that underpins PWPs is discussed by differentiating between the wage, skills and asset vectors. Third, the inclusion criteria and search strategy applied in the review are made transparent. Fourth, the search results are presented in a way that highlights the characteristics of both the included studies and the evaluated PWPs. Fifth, the method used to synthesise the evidence is described. Sixth, the results of the analysis are discussed and illustrated. Thereafter, the report concludes with a debate on the findings' implications for policy-making and the future research agenda.

2 | For a systematic review of the evidence from this programme see Bhatia et al. (2016)

3 | For this assessment, we relied on statements and (if available) power calculations of the authors of the respective study.

4 | <http://www.wiwi.uni-passau.de/en/development-economics/research/public-works-programmes-in-developing-countries/>

2. Definition of public works and typology of PWPs

Under the term 'public works' and similar terms (e.g. labour-intensive employment programmes, cash/food/input for work, and workfare), a wide range of interventions are lumped together that share certain objectives but differ in terms of their prioritisation, exact programme design, and mode of implementation. What unites these interventions in practical terms is that they all 'entail ... the payment of a wage (in cash or in kind) by the state, or an agent acting on its behalf, in return for the provision of labour' (McCord 2012a, p. 8).

For the purposes of this study, we focus on programmes that can be classified as 'social protection instruments ... with the dual objectives of providing temporary employment and generating and/or maintaining some labour-intensive infrastructural projects and social services' (Subbarao et al. 2013, p. 3). Importantly, projects must

therefore have an explicit social protection objective in order to be included, whereas projects that are primarily concerned with infrastructure provision are excluded.⁵ Definitions used in other multi-country studies are similar substance-wise (see, for example, McCord 2012a, p. 8, and Gehrke and Hartwig 2015, pp. 6–7).

To account for the heterogeneity of these programmes, a **typology of PWPs** is employed in this review that differentiates between programmes with a short-term focus (Type 1) and programmes with a medium- to long-term focus (Type 2). The key difference between the two Types is the duration, continuity and predictability of the employment offered to individual beneficiaries through the core public-works component.

In **Type 1** programmes, employment continuity in the sense of employing more or less the same households across many work cycles is not a core element of programming. Instead, targeting is ad hoc and often based on a self-targeting mechanism that entails the deliberate setting of low wage rates, and re-targeting is commonplace. As a result, there is typically considerable movement of households in and out of the programme from one work cycle to the next. Type 1 programmes are mostly implemented in contexts of acute crisis to enable short-term consumption smoothing. However, particularly in the past, they were often also implemented in contexts of chronic poverty.

Type 2 programmes, on the other hand, are mostly implemented in contexts of widespread chronic poverty. They have a medium- to long-term focus in the sense that they place a strong emphasis on keeping initially targeted households in the programme for several years. Retaining households in this way enables the accumulation of savings and assets, which can then be used to proactively protect against livelihood risks and to promote livelihoods. The continuity and predictability of Type 2 pro-

5 | In Subbarao et al., this is referred to as "infrastructure oriented" as opposed to "safety net oriented" (2013, p.5.). In McCord's typology of PWPs, Type A, B and D would fit this definition, whereas type C does not (2012a). Note that none of the studies that satisfied the methodological criteria (see section 4.1) was excluded on grounds of not having an explicit social protection objective.

grammes is therefore high. Targeting is typically carried out by means of a wealth ranking exercise, because pure self-targeting effected through a low wage rate stands at odds with the promotive objectives of these programmes. Some Type 2 programmes also have an additional emergency component that makes it possible to temporarily scale up the programmes to cover households affected by acute shocks.⁶

In reality, many PWPs are not a pure Type 1 or Type 2, falling instead somewhere between these two. Moreover,

there are many programmes that offer various kinds of complementary measures aimed at enhancing and sustaining impacts (e.g. by promoting access to savings groups, loans, insurance, training or various kinds of extension services). In principle, such measures can be attached to both types of programme. However, in practice, they are mostly found in programmes that are closer to the Type 2 end of the spectrum. Henceforth, we will refer to Type 1 and Type 2 programmes with such complementary measures as Type 1 Plus and Type 2 Plus respectively. This typology is summarised in Table 1 below.

Table 1: Typology of PWPs

Type	Key design feature	Primary objective	Example(s)
Type 1	Single short-term episode of employment	To enable consumption smoothing	Most past PWPs that were supported through social action funds in Africa – e.g. the Malawi Third Social Action Fund’s (MASAF III) PWP
Type 2	Repeated or ongoing employment	To provide a form of income insurance	Ethiopia’s PSNP
Plus	Additional measures to complement the core public-works component – e.g. training or access to credit or extension services	To enhance or sustain the gains of the core PW component to ultimately facilitate graduation	Ethiopia’s PSNP + HABP/OFSP World Food Programme’s R4 Rural Resilience Initiative, within which the Food for Assets (FFA) component is embedded

Source: Adapted from McCord 2012a

6 | Employment guarantees (EG) like the well-known Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) programme in India are a third type of PWPs. Instead of offering the continuity of type B programmes MGNREGA offers a maximum of predictability by giving every citizen a legally enshrined right to 100 paid days of work in MGNREGA projects. However, EGs do not exist in the region of interest of this paper and are therefore not further discussed herein.

3. Theory of change of PWP

Essentially, effective social protection programmes must be targeted, optimally timed and address the needs of those in want. The design of such programmes obviously requires a deep understanding of the underlying causes of this want. In this sense, each PWP is the culmination of a context-specific response to addressing these needs. The challenge in pinning down the underlying theory of change of PWPs therefore arises as a result of the heterogeneity of the programmes which, in turn, is contingent on the heterogeneity of the contexts they are implemented in. As put forward by McCord (2012a), PWPs are expected to yield a range of positive impacts through three main vectors: the wage vector, the skills vector and the asset vector. In the following, we highlight the main mechanisms for each of these three vectors, emphasising how they interact and how other factors mediate the way these mechanisms play out in practice in different contexts.

3.1 Wage vector

The wage vector subsumes mechanisms that are directly linked to the wage that is paid (whether in cash or in kind) for working in a public works project. The level of the wages paid has received comparatively more attention in the literature than other design features of PWPs. The following quote captures in words the essence of what is known about the main interactions and (perceived) trade-offs at play when setting PWP wages:

While a low-wage PWP is often adopted with the intention of preventing labour market distortion, reducing demand for PWP employment and targeting the poorest, the available evidence calls into question the effectiveness of wage limitations in achieving any of these three objectives, and reveals moreover that the adoption of this approach may, in many cases, be detrimental to the achievement of overall programme objectives. This problem is compounded by the fact that the real value of the wage, in terms of the household economy, may be significantly overstated ... Thus, it cannot be assumed a priori that the PWP wage represents a vector through which significant social protection benefits will accrue to participants, as this is dependent on the real value of the wage at household level in relation to the household poverty gap. [...] Only with the provision of an adequate PWP wage, the accumulation of assets and investment resulting in improved livelihoods are possible. Failing this, the PWP wage needs to be sustained throughout periods of vulnerability and need. (McCord 2012a, pp. 82–83)

Herein, the first part of her argument – namely that low-wage PWPs tend not to achieve the three objectives that are meant to be achieved through setting the wage to a low rate – is set aside. Instead, we first discuss the second part of her argument – namely the role of wage value in achieving overall programme objectives – in a more formalised and detailed manner.

As a first step, it is important to consider the wage rate in relation to the number of workdays and to understand that the actual value of a given nominal amount may differ between households:

$$\begin{aligned} & \text{(Total) transfer value} \\ & = \text{daily wage rate} * \# \text{ of (total) workdays} \end{aligned}$$

To better capture the actual transfer value for the household, the equation should be extended as follows:

$$\begin{aligned} &\text{Total real transfer value} \\ &= (\text{daily wage rate} * \# \text{ of total workdays}) \\ &- \text{forfeited total income from other sources} \end{aligned}$$

Subtracting **forfeited income from other sources** accounts for the possibility that the labour requirement may incur opportunity costs for the household, which may result in reduced income from income sources other than public works. This aspect sets PWP apart from cash/in-kind transfer programmes without a labour requirement.⁷

In addition, it is critical to take into account that the purchasing power of wages paid in cash may quickly be eroded, especially in crisis situations and thus in the context of emergency PWP. Receiving a nominally fixed amount at the height of a food crisis (when food is scarce and prices are high) does not have the same real value to the recipients as receiving the same nominal amount during normal times (when food is widely available and prices are more affordable).

Furthermore, the magnitude of expected impacts is likely to depend on how the total real transfer value compares to the socio-economic situation of the household. The underlying question is what the transfer enables the household to do that, in the absence of the transfer, it would not be able to do. While various ways to express this could be conceived, we follow McCord's approach of putting the real transfer value in relation to the household (HH) poverty gap. This is a measure of the depth of poverty and is defined as follows:

$$\begin{aligned} &\text{HH poverty gap} \\ &= \text{total HH consumption at the poverty line} \\ &- \text{total HH consumption} \end{aligned}$$

This measure captures how far the total consumption of a household falls short of the poverty line. As for the poverty line, this represents a consumption threshold at which a certain minimum standard is satisfied. In our context, it constitutes a threshold below which house-

holds fail to accumulate assets and make investments that result in sustainably improved livelihoods. Putting this poverty line in relation with the real transfer value yields the following ratio, which we henceforth refer to as the **transfer share**.⁸

$$\begin{aligned} &\text{Transfer share} \\ &= \text{real transfer value} / \text{HH poverty gap} \end{aligned}$$

Hence, the effect that the PWP income has on the **household poverty gap** is as follows:

$$\begin{aligned} &\text{HH poverty gap with PWP} \\ &= \text{HH poverty gap without PWP} \\ &- \text{total real transfer value} \end{aligned}$$

Combining the previous equations into one, as follows, summarises the mechanisms at play in the wage vector:

$$\begin{aligned} &\text{HH poverty gap with PWP} \\ &= \text{total HH consumption at the poverty line} \\ &- \text{total HH consumption without PWP} \\ &- (\text{daily wage rate} * \text{total} \# \text{ of workdays}) \\ &+ \text{forfeited income from other sources} \end{aligned}$$

As a rule of thumb, the smaller the real transfer share is as a fraction of the household poverty gap, the more limited the impacts are likely to be, because the transfer will rarely suffice to overcome the constraints that impoverished the household or kept it in poverty in the first place. Of course, overcoming these constraints ultimately depends on the extent to which they are linked to a lack of money or food and can thus be addressed through transfers.

Finally, the wage employment in a PWP mFinally, wage employment in a PWP may fulfil a more or less significant **insurance function**. In the main, three factors determine the effectiveness of the insurance function offered through public works: (1) the real transfer level, (2) the actual duration of employment in a PWP (i.e. how long a household will remain on the programme) and (3) the predictability

7 | Unless, of course, households deliberately decide to decrease their income in order to qualify for such a transfer programme.

8 | Adapted from the work of the Transfer Project on social cash transfer programmes in sub-Saharan Africa.

of the employment duration (i.e. how well a household can predict the length of time it will be in the programme or under what circumstances it will gain access to the programme). The effectiveness of the insurance function, in turn, may influence the saving and risk-taking behaviours of households. There is, however, no clear expectation regarding the behavioural direction of the effect. On the one hand, the insurance function 'may reduce the need for precautionary savings' (Andersson et al. 2011). On the other hand, households that would not even be able to save at all were no access to a PWP available may be enabled to do so through the public works income. Furthermore, the knowledge of having secured income over a reasonable period of time may encourage some households to use their savings (or take out a loan) in order to make riskier investments with high payoff potential in the medium term (Gehrke 2014). At the same time, there might be other cases where the income security leads to complacency and thus to a reduced willingness to invest in order to improve one's livelihood.

Considering the discussion of the wage vector through the prism of the PWP typology highlights why we would generally expect Type 2 programmes to have more widespread impacts than Type 1 programmes, especially if the household poverty gaps of beneficiary households are wide. Type 2 PWPs offer income insurance over a longer period and the wage typically constitutes a higher transfer share. As a result, the asset accumulation potential is greater. At the same time, behavioural responses regarding saving and risk-taking could reduce these impact differences between Type 1 and Type 2 in practice. Lastly, we have ignored general equilibrium effects that are caused by possible distortions in the labour market and by increased aggregate demand. Effects resulting from both these causes might become relevant if, in particular, larger programmes are considered.

3.2 Asset vector

What most sets PWPs apart from cash transfer pro-

grammes is that their benefits potentially accrue not only from the transfer paid directly to beneficiaries (wage vector), but also through the assets created or services provided. Depending on the type of asset or service, the expectation is that they

1. generate direct or indirect income opportunities for beneficiaries and their communities,

2. shield beneficiaries and their communities against the impact of shocks such as floods and droughts, and /or

3. improve the quality of or access to, social services.

While it is beyond the scope of this paper to reflect on the full theory of change of each public works activity, we describe the factors that matter for most activities and discuss how they interact. The choice of appropriate project activities should depend on their potential labour intensity,⁹ their expected impacts, the programme objectives, the needs of the communities and beneficiary groups that are supposed to benefit from the assets created or services provided, and the capacity, resource and time constraints that may impede the effective implementation of the activities. The following factors can be said to jointly determine the quality, sustainability and relevance of the assets created:

- Involvement of communities in the selection process to strengthen local ownership (Costella and Manjolo 2010, Gehrke and Hartwig 2015, Shuka 2014, and World Bank 2010).¹⁰
- The use of quality materials.
- A labour intensity that does not undermine the quality of the assets created (Gehrke and Hartwig

9 | Labour intensity refers to the share of the total expenditure on PWPs that is spent on labour wages.

10 | Shuka (2014) showed empirically in Ethiopia that the quality of the assets created through the PSNP improved in cases where the communities played an important role in planning and implementation. Surprisingly perhaps, community involvement in usage and maintenance did not seem to make a difference.

2015, Lieuw-Kie-Song 2014, McCord 2012a, McCord 2012b, and Train4Dev 2010).

- Availability of adequate technical expertise, management capacity, construction oversight and minimum standards set out in technical manuals and management guidelines (Gehrke and Hartwig 2015, Lieuw-Kie-Song et al. 2010, and World Bank 2015b).
- Availability and use of technical manuals and management guidelines to ensure minimum standards.
- The set-up of effective (and, if necessary, adequately financed) maintenance arrangements with clearly assigned responsibilities.
- Embedding the public works activities in local development plans to ensure coherence with other local development initiatives (World Bank 2010).

3.3 Skills vector

Compared to the wage vector and, to a lesser extent, the asset vector, the skills vector is often ignored in the literature. In principle, there are three main channels through which skills may be imparted to PWP participants: (1) learning-by-doing through the regular PWP activities, (2) more elaborate on-the-job training closely linked to the regular PWP activities and (3) complementary off-the-job training that is relatively or fully detached from the regular PWP activities but is primarily targeted at PWP participants. Generally, the skills inculcated range from soft skills to technical and business skills (Blattman and Ralston 2015). Possible tangible positive impacts generated via the skills vector may take the form of either improved market-based employment prospects or a sustained increase in income resulting from the application of the newly learned or upgraded skills to self-employed micro-entrepreneurial activities or on-farm activities.

The fact that unemployment in most parts of Africa and the MENA region is not primarily due to a skills gap (i.e. a mismatch between demanded skills and the skill sets of the unemployed) but is rather the outcome of severe labour market slack further limits the potential of PWPs to serve as a bridge to market-based employment, especially in rural areas (Gehrke and Hartwig 2015, Lieuw-Kie-Song 2014, and McCord 2012a). This being the case, training that places an emphasis on the skills and knowledge useful for increasing income from micro-enterprise or agricultural production are probably more likely to have a relatively immediate impact – provided, of course, that they are tailored to the specific labour market context and the needs and capabilities of the participants. Furthermore, utilising newly learned or upgraded skills to implement capital-intensive business ideas presupposes that the combined benefits of the wage and asset vectors will enable the required asset accumulation or, at least, access to credit under reasonable conditions. Note that the latter may instead be facilitated by deploying other complementary components.¹¹

3.4 Expected result chains by outcome area

Having discussed the three vectors separately, let us briefly turn our attention to how and when these vectors might jointly affect various outcomes. For a more detailed consideration of these effects, we refer the reader to the theoretical sections of the studies treating the respective outcome areas. Note that short term in this context refers to the first two years on the programme. Medium term refers to more than two years on the programme (applicable to Type 2 PWPs only) or shortly after the end of programme participation (less than one year after). Long term refers to periods well after the end of programme participation (greater than one year after). Furthermore, in the discussion of results chains we assume that the programmes are **implemented** as intended. However, in reality, implementation is rarely perfect, which means some of the expected benefits may not materialise due to imple-

11 | This was, for instance, attempted in Ethiopia, initially through the Other Food Security Programme (OFSP) and nowadays through separate microfinance institutions that operate in the PSNP communities.

mentation shortcomings. Another risk factor that may undermine medium- to long-term impacts is the occurrence of severe shocks (e.g. drought) that cannot be absorbed by the PWP, especially in cases where the real transfer value is eroded due to price shocks.

Generally, short-term impacts, especially on **(food) consumption, expenditure and asset holdings**, are primarily driven by how the PWP income is used (i.e. through the wage vector). In the medium term, improvements due to second-round effects achieved through the wage vector (payoffs of using the PWP income for productive purposes) may kick in if the real transfer share is sufficiently large in relation to the household poverty gap. Alternatively or additionally, benefits in excess of the direct PWP income could reflect developments in the skills vector and asset vector.

Long-term benefits would reflect sustainable improvements in livelihoods, and there are various conceivable ways in which such improvements could be realised through mechanisms pertaining to one, two or all three of the vectors. However, for this to happen, conditions must be favourable over a long period (e.g. no severe shocks affecting the household), the transfer share must have

been high enough to enable asset accumulation, PWP income must have been used productively, and, possibly, mechanisms in the skills and asset vector must have made positive contributions as well.

The absence of effects on any consumption and expenditure category (including on investment in productive assets) would be indicative of (a) the crowding out of other sources of income or support or (b) a very low transfer share. A widespread decrease of consumption and expenditure without their increase in other areas would be indicative of a combination of both (a) and (b).¹²

If a PWP targets food-insecure households, one would expect the stabilisation of **food consumption** to be the first spending priority. By contrast, if beneficiaries are food-secure when they get paid and are not worried that a shortage of food is imminent, no strong effects on food consumption and related food-security indicators are expected. Conversely, if the real transfer value is far too small to cover the shortage in food, there is obviously no reason to expect impacts in any spending area other than food.

A precondition for improvements in **nutrition** is that the pre-PWP food gaps narrow. Even so, it cannot be assumed

12 | The occurrence of such situations is unlikely because it would imply irrational behaviour of beneficiaries (accepting employment in PWP despite the availability of better income earning opportunities).

that improvements in food security always translate into improved nutritional outcomes, as this typically takes time and also depends on the quality of the diet consumed. The expectation is therefore that Type 1 PWPs have more limited impacts on nutrition than Type 2 programmes do. Given that undernutrition causes particularly long-lasting (or, in fact, often irreversible) health deficits for children below the age of three, this group may benefit most from PWPs in terms of nutritional outcomes (Berhane et al. 2016, Porter and Goyal 2016, and Victoria et al. 2010).

Typically, the expectation is that the patterns of **labour supply** for certain economic activities broadly mirror the patterns of the income from those activities. If income from a specific activity changes without an accompanying increase in the hours supplied in that specific activity, it is an indication that productivity in that activity has changed. This, in turn, may be driven by an increase in skills or the availability of new productive public assets or may follow from productivity-enhancing assets that have been purchased with the PWP income (e.g. new tools or other business equipment).

Child-level outcomes are potentially influenced through several mechanisms that work in opposite directions. This

being the case, outcomes in these areas are particularly difficult to predict theoretically. For instance, child labour may increase as a result of the additional labour demand created by participation in PWPs. At the same time, it may decrease if the extra income reduces the need for children to contribute to household income through paid or unpaid work. Moreover, if the extra income is used to purchase labour-intensive assets, such as livestock, or to intensify/start labour-intensive (income-generating) activities, the labour demand in the household may increase further (Favara et al. 2017, p. 3).

Children supplying labour is connected to education, but it is far from certain that an increase in the former comes at the expense of the latter. The income effect from such labour at the household level may allow increased investments in education. In situations of acute distress, the increased income may prevent negative coping mechanisms such as withdrawing children from school. Ultimately, the overall effect depends on the magnitude of these partly opposing effects. In general, labour-constrained households are particularly prone to the negative effects outweighing the positive ones, with children bearing the brunt of this imbalance.

4. Inclusion criteria and search strategy

4.1 Inclusion criteria

We restricted the search to PWPs from **low income and lower middle-income countries** as classified in the World Bank list of economies from June 2017. Thus, the threshold for inclusion is a gross national income (GNI) per capita of less than \$3,956 in 2016 as calculated on the basis of the World Bank Atlas method.¹³ This decision is based on the argument that differences in the administrative capacity of the state and the level of development of the private sector of the economy limit the generalisability of experiences with PWPs in such countries to upper-middle and high income countries. Geographically, we limit the analysis to **Africa and the MENA region**. The pool of countries that is left after the application of these two search restrictions is highlighted in Table 2.

Regarding the **type of PWPs**, we restrict the search to PWPs that fit the definition put forward by Subbarao et

al. (2013) that is cited at the beginning of Section 2 and all types reflected in the typology defined in the same section (i.e., Type 1, Type 1 Plus, Type 2 and Type 2 Plus). Furthermore, we consider PWPs implemented in rural as well as urban areas – in full awareness that inferences from rural to urban contexts (and vice versa) have to be drawn with caution. In terms of the beneficiaries targeted by the programme, we do not add restrictions other than that they should be part of poor or vulnerable segments of the population (which is already captured in the adopted definition of PWPs) – again in full awareness that beneficiary characteristics matter in terms of (the magnitude of) the impacts to be expected.

We chose the **methodological minimum standards** such that we only include experimental or quasi-experimental studies that provide causal or nearly causal inference in reference to a (statistically constructed) comparable control group. Moreover, in order to be included, statistical significance must be reported in the study and the statistical power must be high enough to give a reasonable expectation of capturing sufficiently small effects in the investigated outcome areas.¹⁴ We generally give preference to peer-reviewed publications in academic journals if there are several versions of a study. However, evaluation reports and unpublished papers are also considered for this review because it may reduce a potential publication bias and avoid the exclusion of very recent evaluations.¹⁵

In terms of outcomes, we consider empirical results relating to impacts along the full causal chain but no implementation or process factors unless they can be directly linked to the reported impacts. However, the results must have been estimated on the basis of the same methodological minimum standards. Thus, anecdote-

13 | The threshold between low- and lower middle-income countries is \$1,005.

14 | For this assessment, we relied on statements and (if available) power calculations of the authors of the respective study.

15 | We deliberately write reduce instead of eliminate because publication bias is likely to be present for PWPs in any case. Undesired findings are simply less likely to be reported. Therefore, it cannot be ruled out that this review overstates positive effects somewhat.

tal observations made in robust quantitative studies are not considered.

4.2 Search methods

The search methods included the screening of electronic data bases, relevant websites and key journals as well as literature snowballing and contacting key researchers and experts. The search line “‘impact’ or ‘evaluation’ or

‘assessment’” was combined with every single term of the following list in order to account for the many names for the types of interventions we are interested in: ‘public works’, ‘PWP’, ‘PW’, ‘public employment’, ‘labor intensive employment’, ‘cash for work’, ‘input for work’, ‘inputs for work’, ‘IFW’, ‘input for asset’, ‘IFA’, ‘food for work’, ‘CFW’, ‘food for assets’, ‘FFA’, and ‘workfare’.¹⁶

Table 2: Pool of countries left after application of the search restrictions

Sub-Saharan Africa		Northern Africa		Middle East	
Included	Excluded	Included	Excluded	Included	Excluded
Angola, Benin, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Dem. Rep. of Congo, Rep. of Congo, Côte d'Ivoire, Eritrea, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe	Botswana, Equatorial Guinea, Gabon, Mauritius, Namibia, Seychelles, South Africa	Djibouti, Egypt, Morocco, Tunisia	Algeria, Libya	Jordan, Syria, West Bank and Gaza, Yemen	Bahrain, Iran, Iraq, Israel, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, United Arab Emirates

16 | A more detailed description of the search methods will be made available in a separate document.

5. Search results

5.1 Description of the PWPs evaluated in the selected studies

Table 3 lists all PWPs that are covered by the studies we selected. Except for Ethiopia's PSNP, all other programmes are programmes of Type 1. Two of these are also from Ethiopia (FFW and EGS). They were implemented before the PSNP was launched. The High Value Food Basket (HVFB) variant of the PSNP refers to a programme variant of the PSNP that was implemented in selected Woredas in the Amhara region. Instead of cash, PSNP in these Woredas received a HVFB with an imputed average value that exceeds the average value in the regular PSNP Woredas (Gilligan et al., 2009b, p.45). The Type 2 Plus variant of the PSNP is the combination with the Other Food Security Programme (OFSP) or the Household Asset Building Programme (HABP) that eventually replaced the OFSP.¹⁷ Some of the studies evaluating the PSNP compare the performance of additional programme variants, e.g., variations of the transfer value and sub-components of the OFSP/HABP.

Of the Type 1 PWPs, only the PEJEDEC-THIMO which was implemented in a (semi-)urban context in Côte d'Ivoire has a 'Plus' component. The study of Bertrand et al. (2016/2017) compares the performance of three different treatment groups (and the pooled treatment group) to comparable non-beneficiaries: Type 1 (i.e., no complementary training), Type 1 Plus with self-employment training and Type 1 Plus with wage-employment training.¹⁸ All other selected studies of Type 1 PWP do not differentiate

between the core public works component and complementary components. This being said, Beegle et al. (2017) explore implicit complementarities between the MASAF III PWP and a fertiliser subsidy programme in Malawi. In addition, the study cross-randomised the timing of the second of two work cycles (pre-harvest vs. (post-) harvest) and the schedule of payments (lump-sum after 12 days vs. five equal instalments).

A number of interesting programmes with a PW component that are currently operating in our regions of interest are not reflected in this review because to date there are no robust evaluations, in particular none that isolate the role of the PW component from the other programme components. The R4 Rural Resilience Initiative of the World Food Programme (WFP) is one example in this respect.¹⁹ It links its Food-for-Asset (FFA) programme, a Type 1 (Plus) PWP, to extra components, such as weather-index insurance.

5.2 Description of the studies selected for analysis

In Table 4, all studies are listed that remained after applying the inclusion criteria and search strategy as described in Section 4. Four studies are randomised control trials (RCTs), they were conducted in Côte d'Ivoire, Malawi, Rwanda and Sierra Leone. The rest are quasi-experimental studies, mostly using matching approaches. Due to the fact that the Ethiopian Government was opposed to allowing an RCT approach to evaluating the PSNP, all studies investigating the PSNP fall into this category. Some of the more recent evaluations of the PSNP used a dose-response model where weakly treated PSNP households were compared to intensively treated PSNP households. Given that the PSNP is the only Type 2 PWP in this review, there is, thus, no evidence from a randomized trial for this type of programmes.

17 | The OFSP was meant "to facilitate asset accumulation" by giving local communities the choice "among a suite of transfers or services including agricultural extension, bee-keeping, seeds, fertiliser packages and soil and water conservation activities such as stone terracing of communal and private fields" (Hoddinott et al., 2012, p.766). While the goal remained unchanged, the HABP differs somewhat from the OFSP. The complementarities between the PSNP and agricultural extension services were strengthened. Credit services were decoupled from extension services. To boost the coverage rate of the HABP compared to the patchy coverage of the OFSP, PSNP households were now given preferential access to the complementary component.

18 | The self-employment training entailed "basic entrepreneurship training to facilitate set-up of new household enterprises and entry into self-employment" (Bertrand et al., 2017, p.5). The wage employment training entailed "training in job search skills and sensitisation on wage employment opportunities to facilitate access to wage jobs (e.g., help in identifying wage job opportunities, CV production, interview skills etc.)" (ibid.).

19 | See Madajewicz et al. (2013) for an impact evaluation of the R4 Initiative in Ethiopia.

Table 3: List of PWPs evaluated in the selected studies

Country	Country acronym	PWP name	PWP acronym	Main implementation context	PWP classification
Cote d'Ivoire	CIV	Emergency Youth Employment and Skills Development - Labour Intensive Public Works Sub-Component	PEJEDEC-THI	(Semi-) urban	Type 1 (Plus)
Ethiopia	ETH	Productive Safety Net Programme	PSNP	Rural	Type 2
Ethiopia	ETH	Productive Safety Net Programme + Other Food Security Programme/Household Asset Building Programme	PSNP + OFSP/HABP	Rural	Type 2 Plus
Ethiopia	ETH	Productive Safety Net Programme - High Value Food Basket	PSNP - HVFB	Rural	Type 2
Ethiopia	ETH	Employment Generation Schemes	EGS	Rural	Type 1
Ethiopia	ETH	Food-For-Work	FFW	Rural	Type
Ghana	GHA	Ghana Social Opportunity Project - Labour Intensive Public Works Programme	GSOP-LIPW	Rural	Type 1
Malawi	MWI	Malawi Social Action Fund Public Works Programme - Phase 3	MASAF III	Rural	Type 1
Rwanda	RWA	Vision 2020 Umurenge Programme	VUP	Rural	Type 1
Sierra Leone	SLE	Youth Employment Social Support Project/ Cash for Work	YESP/CfW	Rural and urban	Type 1
Yemen	YEM	Labour Intensive Works Programme	LIWP	Rural	Type 1

Table 4: List of studies selected after applying the inclusion criteria and the search strategy

Author(s)	Publication Type	Country	Programme acronym	Evaluation duration in years	Study type	Identification strategy
Bertrand et al. (2016)	Evaluation report	CIV	PEJEDEC-THIMO	Short-term 0.4 Medium-term: 2	RCT	ITT using OLS regression (probability weights)
Bertrand et al. (2017)	Unpublished paper	CIV	PEJEDEC-THIMO	Short-term 0.4 Medium-term: 2	RCT	ITT using OLS regression (probability weights)
Gilligan & Hoddinott (2007)	Journal article	ETH	EGS	1.5	Quasi-exp.	PSM & DID
Bezu & Holden (2008)	Journal article	ETH	FFW	Cross-sectional data	Quasi-exp.	Heckman selection model
Quisumbing (2003)	Journal article	ETH	FFW		Quasi-exp.	Arellano-Bond GMM estimator
Andersson et al. (2011)	Journal article	ETH	PSNP	2	Quasi-exp.	PSM, regression analysis
Béné et al. (2012)	Working paper	ETH	PSNP	2	Quasi-exp.	PSM
Berhane et al. (2011)	Evaluation report	ETH	PSNP	4 (dose response)	Quasi-exp.	Matching & DID on a dose-response model
Berhane et al. (2014)	Journal article	ETH	PSNP	4 (dose response)	Quasi-exp.	Matching & DID on a dose-response model
Berhane et al. (2015)	Working paper	ETH	PSNP	3	Quasi-exp.	Matching & DID
Berhane et al. (2016)	Evaluation report	ETH	PSNP	2, 4 and 6	Quasi-exp.	Inverse probability weighting regression adjustment estimators
Debela et al. (2014)	Working paper	ETH	PSNP	Cross-sectional data	Quasi-exp.	Exogenous switching regression
Favara et al. (2016)	Unpublished paper	ETH	PSNP	Medium-term	Quasi-exp.	OLS estimate of a conditional demand function for child cognitive ability
Gebrehiwot & Castilla (2016)	Unpublished paper	ETH	PSNP	Up to 2 (dose response model)	Quasi-exp.	2SLS, reduced form IV, generalised PSM (maximum likelihood) with continuous treatment; DID, PSM
Gilligan et al. (2009a)	Journal article	ETH	PSNP	1.5	Quasi-exp.	PSM
Gilligan et al. (2009b)	Evaluation report	ETH	PSNP	2	Quasi-exp.	NNM
Hoddinott et al. (2009)	Unpublished paper	ETH	PSNP	Cross-section	Quasi-exp.	NNM
Hoddinott et al. (2012)	Journal article	ETH	PSNP	4 (dose response)	Quasi-exp.	Dose-response model
Porter & Goyal (2016)	Journal article	ETH	PSNP	3	Quasi-exp.	PSM; DID; sibling-differences
Sabates-Wheeler & Devereux (2010)	Journal article	ETH	PSNP	2	Quasi-exp.	Growth regression model using OLS multivariate regression analysis
Tafere & Woldehanna (2012)	Working Paper	ETH	PSNP	3	Quasi-exp.	Matching & DID
Weldegebriel & Prowse (2013)	Journal article	ETH	PSNP	Cross-section	Quasi-exp.	PSM (NNM, radius, kernel, direct NNM)
Woldehanna (2009)	Working paper	ETH	PSNP; EGS	PSNP: 1 year FFW: up to 3 years	Quasi-exp.	PSM
Osei-Akoto et al. (2014)	Unpublished paper	GHA	GSOP-LIPW	1	Quasi-exp.	PSM
Beegle et al. (2017)	Journal article	MWI	MASAF III	3	RCT	DID (ITT)
Hartwig (2013)	Unpublished paper	RWA	VUP	1.25	Quasi-exp.	NNM & DID
Rosas & Sabarwal (2016)	Working paper	SLE	YESP/CfW	0.3	RCT	ITT using OLS regression; LATE
Christian et al. (2015)	Working paper	YEM	LIWP	1.5	RCT	DID (ITT)

Note: The acronyms used in the study type column and identification strategy column are described in the list of acronyms and abbreviations on page 9.

5.3 Method used for synthesising the evidence

The guiding principle in summarising and analysing the evidence was to be fully transparent in showing how the information was gradually condensed to the level reported here. In the first step, all outcome indicators that are reported in the selected studies were entered into one comprehensive data form. More precisely, the magnitude and direction of the effect as well as the level of significance of each effect was entered. If several estimation methods were used in a study the results of the method preferred by the study's author(s) was chosen. In cases with several equally preferred methods, all of them were reported. To do justice to the nuances of study findings, the results of heterogeneity analysis (e.g., concerning programme variants, gender, urban/rural, or age) were also entered into the data form. The indicators were clustered in outcome areas without reducing the complexity further at this stage.

In the second step, a separate data form was created for each outcome area by exporting all information about the clustered indicators from the full data form. In these outcome-specific data forms all studies were removed that do not report indicators for this category. In the third step, the complexity was reduced by further clustering the indicators and summarising the evidence patterns by assigning it to one of the categories in Table 5. In doing so, each study component was treated as a separate study. In cases with several similar yet not identical indicators, an additional step was added in which the cells were assigned to the categories, but the clustering was not yet done to the full extent in order to make sure that justice is done to the nuances of the findings in the fourth step.

In this fourth step, the patterns for each row (study) and column (outcome category) were summarised using the same categories. The outcomes following from these four steps are the tables in section 6.1. In the fifth step, the information in these tables was illustrated in figures (also see section 6.1). The analysis in the results section was then conducted on the basis of these tables and figures by clearly differentiating variations in trends (or lack thereof) for the various PWP types of the typology.

In the report, only the outcome areas that were investigated in at least eight studies (not counting study components as separate studies) are reported. These are income, consumption and expenditures, food security, nutrition, education, productive and non-productive asset holdings, agricultural production and techniques, and labour supply. Upon request the analysis for additional outcome areas (other support/transfers, loans, savings, child labour, health, resilience, and self-perceived well-being) are available.

In cases where a journal article (Berhane et al., 2014; Hoddinott et al., 2012) was published on the basis of a more comprehensive evaluation report (Berhane et al., 2011), only the results of the journal article are considered for each outcome area and programme variant that are covered in both publications. Results in the evaluation reports are only considered for outcome areas and programme variants that are not reported in the journal article. Likewise, if there are several versions of a study, none of which is a peer-reviewed journal article, the results in the most recent version are considered.

Table 5: Categories to summarise the patterns of the empirical findings

Evidence pattern category	Abbreviation	Explanation when it applies
Consistently positive	Cst. +	Requires consistently positive effects of closely connected indicators, several robust estimation methods or consistent patterns in the heterogeneity analysis. At least two of the effects have to be significant at the 5% level or below.
Positive trend	Trend +	If only one effect is reported, this one has to be positive. If several effects are reported, the majority of the effects must be positive and significant.
Inconclusive	Inconcl.	This applies in scenarios that are not captured by any of the other categories, e.g.: <ul style="list-style-type: none"> Scenario 1: Several closely connected effects are reported. Some of them are statistically significant and positive. Others are statistically significant and negative. Scenario 2: There are several statistically significant effects that point in the same direction, but there are also many effects that are not statistically significant. Scenario 3: Two closely connected effects are reported. One is statistically significant (either sign), the other is not.
Insignificant	Ins.	Only one effect is reported and it is not statistically significant.
Mostly insignificant	Most. ins.	Several closely connected effects are reported. While there is a statistically significant effect, most effects are not significant.
Consistently insignificant	Cst. ins.	There is more than one reported effect and all of these are insignificant.
Negative trend	Trend -	If only one effect is reported, this one has to be negative. If several effects are reported, the majority of the effects must be negative and significant.
Consistently negative	Cst. -	Requires consistently negative effects of closely connected indicators, several robust estimation methods or consistent patterns in the heterogeneity analysis. At least two of the effects have to be significant at the 5% level or below.
Single study	Single st.	The outcome category has only been investigated in one single study. Study components reported in the same publication do not count as separate studies in this case.

Note: Positive in this respect does not denote the algebraic sign but the desirable direction (i.e., improvements). Only if there is no desirable direction, it denotes the algebraic sign, which is explicitly noted in these cases. Likewise, negative denotes the undesirable direction (i.e., deteriorations), if applicable.

6. Synthesis of the evidence

6.1 Synthesis of the evidence by outcome area

6.1.1 Income, consumption and expenditure

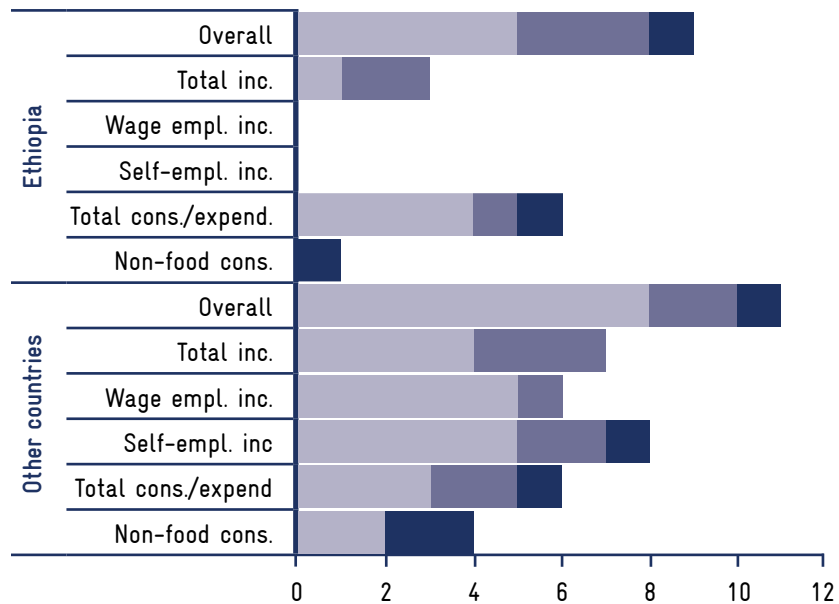
With respect to the impacts on income, consumption and expenditure, the overall picture is inconclusive, as highlighted in Figure 1 and Table 6. Of the 20 studies where such impacts were investigated, five find positive trends overall, but the majority of studies detect no or only few significant effects. The outcome areas that have been aggregated for this assessment are total income, income from wage employment, income from self-employment, total consumption and expenditure, and non-food consumption and expenditure.

If one looks at the characteristics of the various programmes with the most positive results, it is striking to see that three of the five studies concern Type 1 PWPs from three different countries (Côte d'Ivoire, Ethiopia and Sierra Leone) where impacts were measured in the short-term, i.e. while the beneficiaries were still benefiting from the programme. Thus, it mainly captures the direct income effect of the wages received rather than the post-programme impacts. Moreover, the two studies with positive

trends overall for a Type 2 PWP are the only ones where payments were not made exclusively in cash, but instead in mixed form or food only (Devereux & Sabates-Wheeler, 2010). At the same time, among the studies without statistically significant effects, all PWP types are represented, including the theoretically most promising Type 2 Plus programme variant in Ethiopia (Gilligan et al., 2009a). One evaluation of the Type 2 variant even detects a consistently negative effect on total and non-food consumption and expenditure (Tafere & Woldehanna, 2012). This implies that there is to date no study that provides convincing and robust empirical evidence that a cash-based Type 2 or Type 2 Plus programme can sustainably boost total income, expenditure or (non-food) consumption of beneficiary households. Furthermore, there are several studies where no statistically significant direct income effect could be detected, even if the sample was restricted to households that received a comparatively higher transfer value.

With respect to the source of income, only the study of the Type 1 (Plus) PWP in Côte d'Ivoire tells a coherent story. Income from self-employment decreased while the programme was running, but after the end of the programme it increased for beneficiaries that had received self-employment training and, surprisingly, for beneficiaries that had received no training, but not for beneficiaries that had received wage employment training. Yet, even in those households where beneficiaries experienced an increase in income from self-employment no increase in the share of households engaged in self-employment or in hours worked in self-employment can be detected. Hence, the increase in self-employment income is due to an increase in the profitability of existing activities (see section 6.1.2), i.e. growth at the intensive but not extensive margin. One must note that this programme was implemented in a (semi-)urban context and, therefore, has limited external validity in rural contexts where most other programmes are predominantly implemented.

Figure 1: Income, consumption and expenditure



Studies with no significant effects
 Studies with significant positive effects
 Studies with inconclusive or significant negative effects

Table 6: Income, consumption and expenditure

Country	Study	PWP type	Treatment variation	PWP name		Overall	Total inc.	Wage empl. inc.	Self-empl. inc.	Total cons./ expend.	Non-food cons.
ETH	Sabates-Wheeler & Devereux (2010)	2	Food	PSNP	X	Trend +	Trend +				
CIV	Bertrand et al. (2017) - ST	1 (Plus)	All PW HHs, incl. compl. tr.	PEJEDEC-THIMO		Trend +	Trend +	Cst. +	Trend -	Trend +	
ETH	Gilligan & Hoddinott (2007)	1		EGS	X	Trend +				Trend +	
SLE	Rosas & Sabarwal (2016)	1		YESP/CfW		Trend +	Trend +				
ETH	Sabates-Wheeler & Devereux (2010)	2	Mixed	PSNP	X	Trend +	Trend +				
GHA	Osei-Akoto et al. (2014)	1		GSOP-LIPW		Inconcl.				Trend +	Trend -
CIV	Bertrand et al. (2017) - MT	1 Plus	+ self-empl. tr.	PEJEDEC-THIMO		Mos. ins.	Cst. ins.	Cst. ins.	Trend +	Cst. ins.	
CIV	Bertrand et al. (2017) - MT	1	Only PW HHs w/o compl. tr.	PEJEDEC-THIMO		Mos. ins.	Cst. ins.	Cst. ins.	Trend +	Cst. ins.	
CIV	Bertrand et al. (2017) - MT	1 (Plus)	All PW HHs, incl. compl. tr.	PEJEDEC-THIMO		Mos. ins.	Trend +	Cst. ins.	Cst. ins.	Cst. ins.	
RWA	Hartwig (2013)	1		VUP		Mos. ins.	Ins.			Mos. ins.	
ETH	Weldegebriel & Prowse (2013)	2		PSNP	X	Mos. ins.					
CIV	Bertrand et al. (2017) - MT	1 Plus	+ wage-empl. tr.	PEJEDEC-THIMO		Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	
YEM	Christian et al. (2013)	1		LIWP		Cst. ins.		Cst. ins.			Cst. ins.
MWI	Beegle et al. (2017)	1	24 workdays (harvest season)	MASAF III		Cst. ins.					Cst. ins.
MWI	Beegle et al. (2017)	1-2	24 extra workdays (lean season)	MASAF III		Cst. ins.					Cst. ins.
ETH	Gilligan et al. (2009a)	2	Any transfer value	PSNP	X	Cst. ins.				Cst. ins.	
ETH	Gilligan et al. (2009a)	2	High transfer value	PSNP	X	Cst. ins.				Cst. ins.	
ETH	Gilligan et al. (2009a)	2 Plus	Any transfer value + OFSP (=HABP)	PSNP + OFSP	X	Cst. ins.				Cst. ins.	
ETH	Sabates-Wheeler & Devereux (2010)	2	Cash	PSNP	X	Cst. ins.	Cst. ins.				
ETH	Tafere & Woldehanna (2012)	2		PSNP	X	Cst. -				Cst. -	Cst. -
ETHIOPIA OVERALL					X		Trend +			Inconcl.	
REST OVERALL							Trend +	Single st.	Single st.	Inconcl.	Mos. ins.

6.1.2 Labour supply

Although there are no strong indications that offering public works replaces other economic activities of beneficiary households (crowding out), there is also no indication that it boosts employment beyond the public works employment, as highlighted in Figure 2 and Table 7. The outcome areas that have been aggregated for this assessment are the number of economic activities, total hours worked, wage employment, self-employment (mainly referring to non-farm own business activities), non-farm activities, and the use of hired or shared labour. The employment categories comprise indicators denoted in hours worked as well as dummy variables to indicate whether or not a household is engaged in such activities or not.

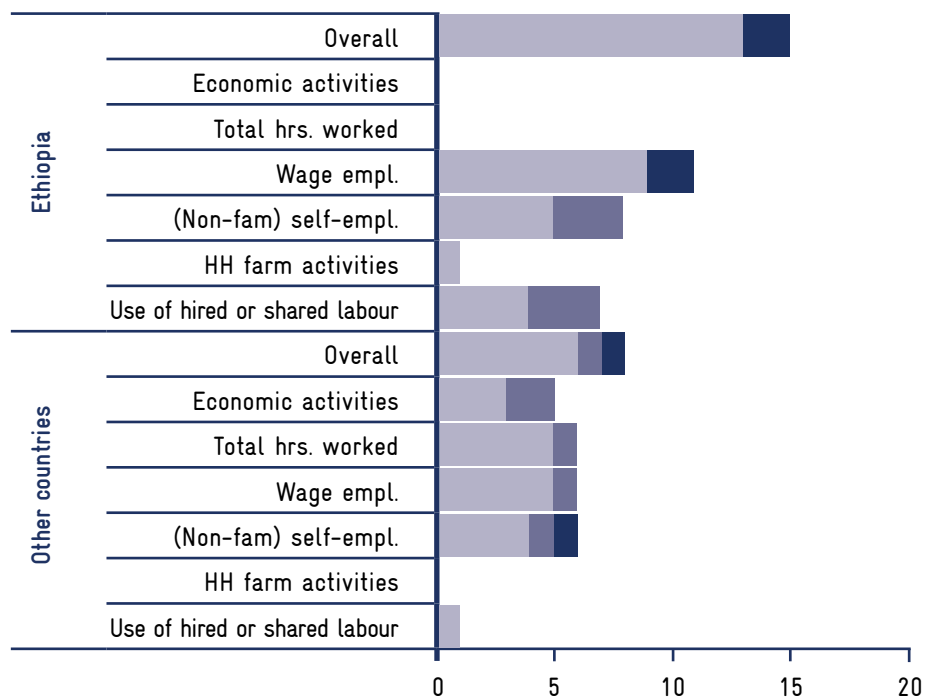
Of the 23 studies where labour supply impacts were investigated, only the very short-term evaluation (4 months) of a Type 1 PWP in Sierra Leone finds a consistent increase in wage and self-employment (Rosas & Sabarwal, 2016). The fact that compared to other PWPs this programme targeted a particularly productive segment of the population (individuals aged 15–35 in poor communities)

may explain this result. An evaluation of Ethiopia's PSNP also finds a statistically significant increase in self-employment for the full sample of PSNP households (Type 2 (Plus)) and the Type 2 Plus sample (Gilligan et al., 2009a), but the other PSNP evaluations do not corroborate this finding (Berhane et al., 2011; Gilligan et al., 2009b). The Type 1 Plus programme variant that offered complementary self-employment training in a semi-urban context in Côte d'Ivoire did not lead to an employment increase in the short- to medium-term either (Bertrand et al., 2016/2017).²⁰ The two studies that investigated the **use of hired or shared labour by beneficiary households** (Ethiopia and Malawi) found no indications of an increase (Beegle et al., 2017; Gilligan et al., 2009b).

To sum up, to date, there is no robust empirical evidence that a PWP of any type generates sustainable extra employment in addition to the PW employment in the medium- to long-term. This is consistent with the findings regarding the impacts on income, consumption and expenditure.

20 | See section 6.1 for a synthesis of the findings regarding labour supply and the findings regarding income, consumption and expenditure.

Figure 2: Labour supply



- Studies with no significant effects
- Studies with significant positive effects
- Studies with inconclusive or significant negative effects

Table 7: Labour supply

Country	Study	PWP type	Treatment variation	PWP name		Overall	Economic activities	Total hrs. worked	Wage empl.	(Non-farm) self-empl.	HH farm activities	Hired or shared labour
SLE	Rosas & Sabarwal (2016)	1		YESP/CfW		Cst. +			Cst. +	Cst. +		
CIV	Bertrand et al. (2016/2017) - ST	1		PEJEDEC-THIMO		Inconcl.	Trend +	Trend +	Trend +	Trend -		
ETH	Gilligan et al. (2009a)	2 (Plus)	Any transfer value	PSNP	X	Inconcl.			Male trend -	Trend +		
ETH	Gilligan et al. (2009a)	2 (Plus)	Higher transfer value	PSNP	X	Inconcl.			Male trend -	Trend +		
ETH	Gilligan et al. (2009b)	2 Plus	Agric. production enhancement services	PSNP - HVFB + OFSP	X	Inconcl.			Ins.			Trend -
ETH	Gilligan et al. (2009b)	2	PW only	PSNP - HVFB	X	Inconcl.			Ins.			Trend -
ETH	Gilligan et al. (2009b)	2 (Plus)		PSNP	X	Most. ins.			Cst. ins.	Most. ins.	Most. ins.	
ETH	Gilligan et al. (2009b)	Plus	Irrigation services	OFSP	X	Most. ins.			Ins.			Inconcl.
ETH	Gilligan et al. (2009a)	2 Plus		PSNP + OFSP	X	Most. ins.			Cst. ins.	Trend +		
CIV	Bertrand et al. (2016/2017) - MT	1 (Plus)	All PW HHs, incl. those with compl. tr.	PEJEDEC-THIMO		Most. ins.	Trend + (2016)	Ins.	Cst. ins.	Cst. ins.		
YEM	Christian et al. (2013)	1		LIWP		Most. ins.		Most. ins.				
ETH	Berhane et al. (2014)	2		PSNP	X	Ins.				Ins.		
ETH	Berhane et al. (2011)	2 Plus	vs. no PW	PSNP + HABP	X	Ins.				Ins.		
ETH	Berhane et al. (2011)	2 Plus	vs. Type 2	PSNP + HABP	X	Ins.				Ins.		
ETH	Berhane et al. (2011)	2 Plus	vs. Plus	PSNP + HABP	X	Ins.				Ins.		
MWI	Beegle et al. (2017)	1		MASAF III		Ins.						Ins.
ETH	Gilligan et al. (2009b)	Plus	Agric. production enhancement services	OFSP	X	Cst. ins.			Ins.			Cst. ins.
ETH	Gilligan et al. (2009b)	Plus	SWC services	OFSP	X	Cst. ins.			Ins.			Cst. ins.
ETH	Gilligan et al. (2009b)	2 Plus	Irrigation services	PSNP - HVFB + OFSP	X	Cst. ins.			Ins.			Cst. ins.
ETH	Gilligan et al. (2009b)	2 Plus	SWC services	PSNP - HVFB + OFSP	X	Cst. ins.			Ins.			Cst. ins.
CIV	Bertrand et al. (2016/2017) - MT	1	PW only	PEJEDEC-THIMO	X	Cst. ins.	Ins.	Ins.	Cst. ins.	Cst. ins.		
CIV	Bertrand et al. (2016/2017) - MT	1 Plus	+ self-empl. training	PEJEDEC-THIMO		Cst. ins.	Ins.	Ins.	Cst. ins.	Cst. ins.		
CIV	Bertrand et al. (2016/2017) - MT	1 Plus	+ wage-empl. training	PEJEDEC-THIMO		Cst. ins.	Ins.	Ins.	Cst. ins.	Cst. ins.		
ETHIOPIA OVERALL					X				Inconcl.	Inconcl.	Single st.	Inconcl.
REST OVERALL							Single st.	Most. ins.	Inconcl.	Inconcl.		Single st.

6.1.3 Food consumption and food security

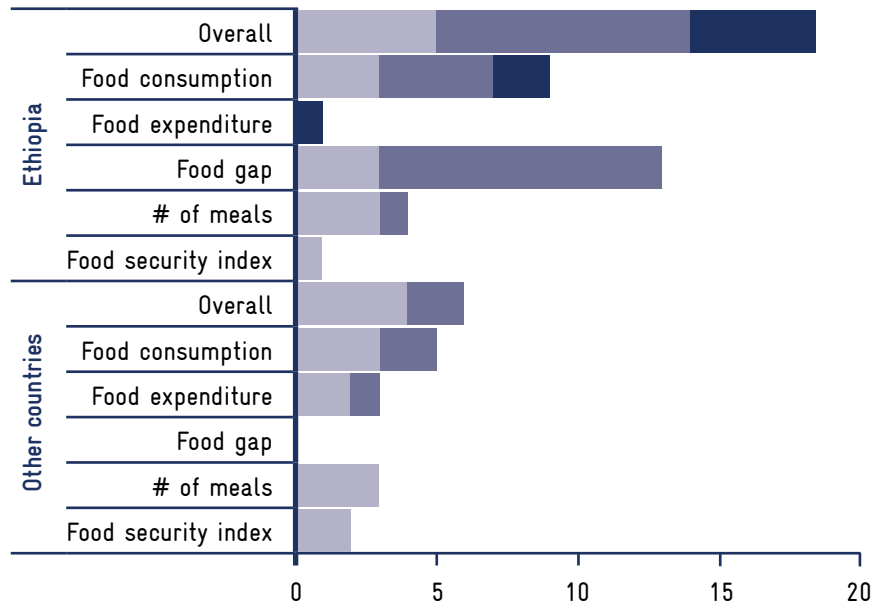
Of the 25 studies where impacts on food consumption and food security were investigated, 19 cover Ethiopia of which, in turn, all but one are from the PSNP and its various variants. The overall picture from Ethiopia's PSNP (Type 2 (Plus)) is positive, whereas it is inconclusive for the Type 1 PWPs in the other countries (Ghana, Malawi, Rwanda and Sierra Leone), as highlighted in Figure 3 and Table 8. The outcome areas that have been aggregated for this assessment are food consumption, food expenditure, (crop-specific) food gap, the number of meals eaten, food security indices and scores, and expressed 'worries' about not having enough food.

With respect to the types of PWPs, it is noteworthy that all evaluations of Ethiopia's **Type 2 Plus** variant find overall positive impacts although it has not been investigated whether this extends beyond the time on the programme (Berhane et al., 2014; Gilligan et al., 2009a; Gilligan et al., 2009b). By contrast, there are no strong indications

that the OFSP, the former complementary Plus component of the PSNP, on its own improved food security as measured by crop-specific food gaps (Gilligan et al., 2009b). The overall findings regarding the **Type 2** variant (PSNP only) are somewhat mixed, but tendencies are positive regarding a reduction of the food gap.²¹ The mixed overall findings are mainly a result of the inconclusive picture for food consumption. The evidence for **Type 1** PWPs is even more inconclusive. While the studies from Ghana, Rwanda and Sierra Leone find improvements, the studies from Malawi and Yemen do not. Especially the non-findings in the Malawian study are noteworthy because none of the many reported indicators showed signs of improvements, not even for the programme variant where beneficiaries had received twice the transfer value (because they had worked 48 days instead of 24 days). This suggests that it cannot be taken for granted that Type 1 programmes effectively enable food security.

21 | Defined as follows: 12 minus the number of food secure months.

Figure 3: Food consumption and food security



- Studies with no significant effects
- Studies with significant positive effects
- Studies with inconclusive or significant negative effects

Table 8: Food consumption and food security

Country	Study	Treatment variation	PWP type	PWP name		Overall	Food consumption	Food expenditure	Food gap	# of meals	Food security index
ETH	Berhane et al. (2014)	+ compl. component	2 Plus	PSNP + HABP	X	Cst. +			Cst. +		
ETH	Sabates-Wheeler & Devereux (2010)	Food	2	PSNP	X	Cst. +			Cst. +		
ETH	Sabates-Wheeler & Devereux (2010)	Mixed	2	PSNP	X	Cst. +			Cst. +		
RWA	Hartwig (2013)		1	VUP		Cst. +		Cst. +			
GHA	Osei-Akoto et al. (2014)		1	GSOP-LIPW		Cst. +	Cst. +				
ETH	Gilligan et al. (2009b)	High transfer value	2	PSNP	X	Trend +	Cst. +		Trend +		
ETH	Berhane et al. (2011)		2 (Plus)	PSNP	X	Trend +			Cst. +	Trend +	
ETH	Gilligan et al. (2009b)	+ compl. component	2 Plus	PSNP + OFSP	X	Trend +			Trend +		
ETH	Gilligan et al. (2009b)	HVFB	2	PSNP - HVFB	X	Trend +			Cst. +		
SLE	Rosas & Sabarwal (2016)		1	YESP/CfW		Trend +	Trend +				
ETH	Gilligan et al. (2009a)	+ compl. component	2 Plus	PSNP + OFSP	X	Trend +	Trend +		Cst. +	Cst. ins.	
ETH	Berhane et al. (2014)		2	PSNP	X	Inconcl.	Cst. ins.		Cst. +		
ETH	Gilligan & Hoddinott (2007)		1	EGS	X	Inconcl.	Trend +				
ETH	Gilligan et al. (2009b)	Any transfer value	2	PSNP	X	Inconcl.	Cst. ins.		Trend +		
ETH	Porter & Goyal (2016)		2	PSNP	X	Inconcl.	Trend -				
ETH	Gilligan et al. (2009a)	High transfer value	2	PSNP	X	Most. ins.	Trend +		Cst. ins.	Cst. ins.	
ETH	Béné et al. (2012)		2	PSNP	X	Mos. ins.					Mos. ins.
ETH	Gilligan et al. (2009b)	OFSP irrigation services only (no PW)	Plus	OFSP	X	Mos. ins.					
ETH	Gilligan et al. (2009b)	OFSP seed services only (no PW)	Plus	OFSP	X	Mos. ins.					
YEM	Christian et al. (2013)		1	LIWP		Mos. ins.	Mos. ins.			Cst. ins.	
ETH	Sabates-Wheeler & Devereux (2010)	Cash	2	PSNP	X	Cst. ins.			Cst. ins.		
ETH	Gilligan et al. (2009a)	Any transfer value	2	PSNP	X	Cst. ins.	Cst. ins.		Cst. ins.	Cst. ins.	
MWI	Beegle et al. (2017)	24 workdays	1	MASAF III		Cst. ins.	Cst. ins.	Cst. ins.		Cst. ins.	Cst. ins.
MWI	Beegle et al. (2017)	+ 24 extra workdays (lean season)	1	MASAF III		Cst. ins.	Cst. ins.	Cst. ins.		Cst. ins.	Cst. ins.
ETH	Tafere & Woldehanna (2012)		2	PSNP	X	Cst. -	Cst. -	Cst. -			
ETHIOPIA OVERALL					X		Inconcl.	Single st.	Trend +	Most. ins.	Single st.
REST OVERALL							Inconcl.	Inconcl.		Single st.	Single st.

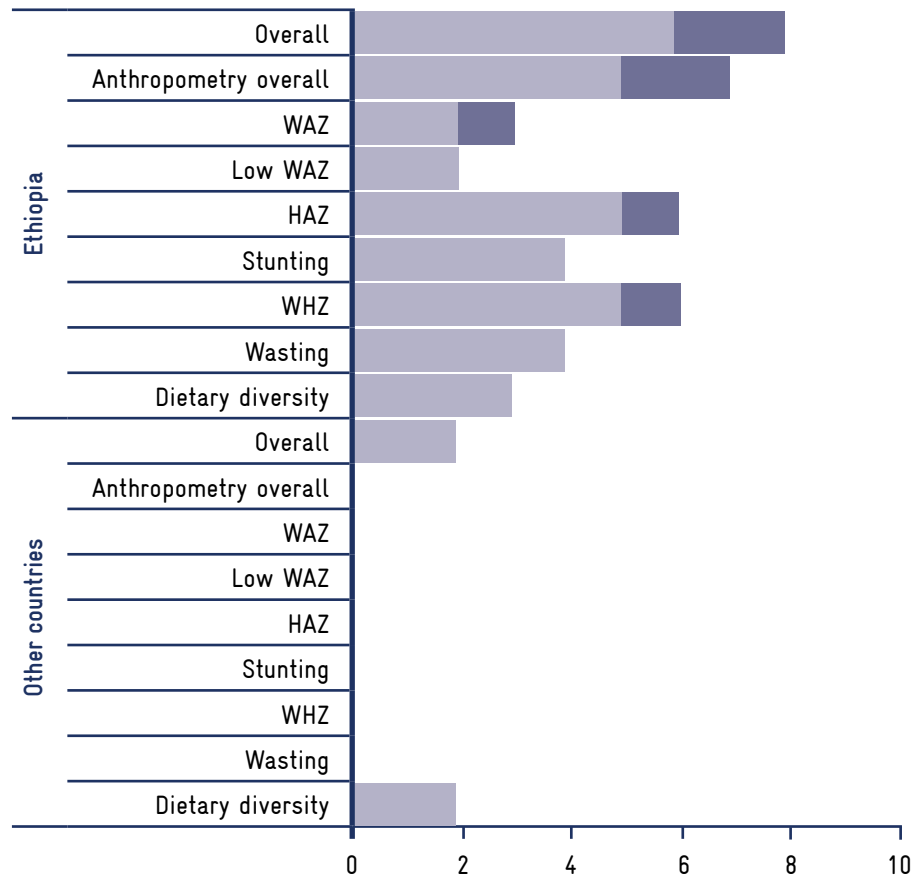
6.1.4 Nutrition

Of the ten studies where impacts on nutrition were investigated, eight are from Ethiopia of which, in turn, all but one is from the PSNP and its variants. While the Ethiopian studies mostly focus on anthropometric outcomes, the two non-Ethiopian studies (from Malawi and Yemen) only investigate dietary diversity outcomes. Overall, the findings from Ethiopia for anthropometric outcomes are inconclusive, irrespective of whether one looks at acute undernutrition (measured through WHZ and wasting), chronic undernutrition (measured through HAZ and stunting) or both (measured through WAZ and low WAZ).²² Two evaluations of the PSNP (Type 2) find statistically significant reductions

in acute and chronic undernutrition, whereas the other three evaluations do not, even if the sample is restricted to households that received a higher transfer value (Gilligan et al., 2009b). An evaluation of an Ethiopian Type 1 PWP found no strong indications of reductions in acute or chronic undernutrition. None of the studies that report dietary diversity outcomes, irrespective of programme type and country, find statistically significant effects.

22 | WHZ = weight-for-height Z-score; wasting = WHZ < -2; HAZ = height-for-age Z-score; stunting = HAZ < -2; WAZ = weight-for-age Z-score; low WAZ = WAZ < -2.

Figure 4: Nutrition



- Studies with no significant effects
- Studies with significant positive effects
- Studies with inconclusive or significant negative effects

Table 9: Nutrition

Country	Study	Treatment variation	PWP type	PWP name		Nutrition overall	Anthropometry overall	WAZ	Low WAZ	HAZ	Stunting	WHZ	Wasting	Dietary diversity
ETH	Debela et al. (2014)		2	PSNP	X	Cst. +	Cst. +					Cst. +		
ETH	Porter & Goyal (2016)		2	PSNP	X	Trend +	Cst. +	Cst. +		Cst. +				Cst. ins.
ETH	Quisumbing (2003)		1	FFW	X	Mos. ins.	Mos. ins.			Mos. ins.		Mos. ins.		
ETH	Gebrehiwot & Castilla (2016)		2	PSNP	X	Mos. ins.	Mos. ins.			Mos. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.
ETH	Gilligan et al. (2009b)	Any transfer value	2	PSNP - HVFB	X	Mos. ins.	Mos. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Mos. ins.	
ETH	Gilligan et al. (2009b)	Higher transfer value	2	PSNP - HVFB	X	Mos. ins.	Mos. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	Mos. ins.	
ETH	Berhane et al. (2016)		2	PSNP	X	Cst. ins.	Cst. ins.			Cst. ins.	Cst. ins.	Cst. ins.	Cst. ins.	
ETH	Berhane et al. (2014)		2	PSNP	X	Cst. ins.								Cst. ins.
YEM	Christian et al. (2013)		1	LIWP		Cst. ins.								Cst. ins.
MWI	Beegle et al. (2017)		1	MASAF III		Cst. ins.								Cst. ins.
ETHIOPIA OVERALL					X	Inconcl.	Inconcl.	Inconcl.	Single st.	Inconcl.	Cst. ins.	Inconcl.	Mos. ins.	Cst. ins.
REST OVERALL						Cst. ins.								Cst. ins.

6.1.5 Asset holdings

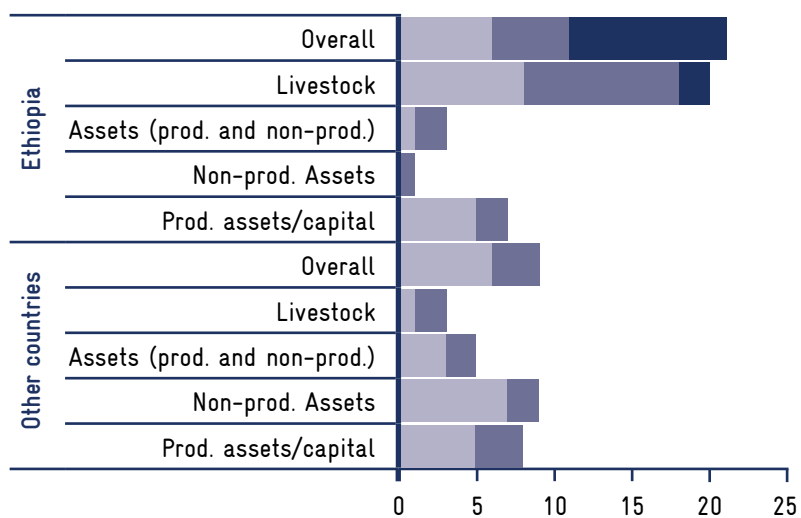
Of the 30 studies where impacts on asset holdings were investigated, 21 relate to Ethiopia of which, in turn, all but one is from the PSNP and its various variants. The outcome areas that have been aggregated for this assessment are various livestock indicators (e.g., number of livestock, value of livestock and tropical livestock units (TLUs)), non-productive assets, productive assets and capital, and assets in general (i.e., productive and non-productive). The overall picture across the diverse outcome areas and programme variants is inconclusive for Ethiopia and the other countries. Yet, a differentiation by PWP type and variant can provide some insights.

Three of the four evaluations of the **Type 2 Plus** variant of the PSNP (i.e., plus OFSP/HABP) find positive trends for livestock ownership and one of the two studies that investigated it also for productive assets in general (Berhane et al., 2011). However, there is no statistically significant difference when it is compared to the Type 2 variant or the Plus components without the PSNP. The overall findings regarding the PSNP alone (**Type 2**) are inconclusive. While most studies find increases in livestock ownership, others do not, and one even detects a decrease. The findings for the other asset categories are mostly insignificant and in some cases even negative. An evaluation of a Type 1 PWP in Ethiopia detects a decrease in the value of livestock. In short, while the evidence is

not consistently positive, the Type 2 Plus variant in Ethiopia seems to outperform the other variants with respect to asset accumulation, especially of livestock. However, there is no robust evidence to date that sheds light on the question whether asset accumulation persists beyond the time households are benefitting from the programme. Regarding other design features, the Type 2 variant where wages were paid in food performed better than the mixed payment modality which, in turn, performed better than the cash variant (Sabates-Wheeler & Devereux, 2010). Yet, more studies are needed to confirm such differences in effectiveness.

Two of the three evaluations of **Type 1** programmes outside Ethiopia (from Rwanda and Sierra Leone) find increases in livestock ownership in the short-term, but the third one (from Yemen) does not. Regarding other assets, the pattern for these three studies is the same. The evaluation of Malawi's MASAF III PWP finds also no positive effect on asset accumulation. The only study conducted in a (semi-) urban context detects a growth in the asset base in the short-term and for the Type 1 variant also in the medium-term. However, the Type 1 Plus variants did not perform well in this respect. In fact, there are even indications of a decrease in the asset base for the beneficiaries that additionally received self-employment training.

Figure 5: Asset holdings



- Studies with no significant effects
- Studies with significant positive effects
- Studies with inconclusive or significant negative effects

Table 10: Asset holdings

Country	Study	PWP type	Treatment variation	PWP name		Overall	Livestock	Assets (prod. and non-prod.)	Non-prod. assets	Prod. assets/ capital
CIV	Bertrand et al. (2016) – ST	1 (Plus)		PEJEDEC-THIMO		Trend +		Trend +	Ins.	Trend +
RWA	Hartwig (2013)	1		VUP		Trend +	Trend +		Trend +	Trend +
ETH	Berhane et al. (2011/2014)	2 Plus	vs. no PW	PSNP + OFSP	X	Trend +	Trend +			Trend +
ETH	Gilligan et al. (2009b)	2	High transfer value, any variability	PSNP	X	Trend +	Trend +			
ETH	Gilligan et al. (2009b)	2	High transfer value, low variability	PSNP	X	Trend +	Trend +			
ETH	Gilligan et al. (2009b)	2 Plus	Any transfer value	PSNP + OFSP	X	Trend +	Trend +			
ETH	Gilligan et al. (2009b)	2	High transfer value	PSNP – HVFB	X	Trend +	Trend +			
SLE	Rosas & Sabarwal (2016)	1		YESP/CfW		Trend +	Trend +		Rural trend +	Rural trend +
ETH	Andersson et al. (2011)	2		PSNP	X	Inconcl.	Ins.			
ETH	Andersson et al. (2011)	2 Plus		PSNP + OFSP	X	Inconcl.	Trend +			
ETH	Berhane et al. (2014)	2 (Plus)	All PSNP recipients	PSNP	X	Inconcl.	Trend +			Ins.
ETH	Gilligan et al. (2009b)	2	Any transfer value	PSNP	X	Inconcl.	Trend +			
ETH	Gilligan et al. (2009b)	2	High transfer value, high variability	PSNP	X	Inconcl.	Trend +			
ETH	Sabates-Wheeler & Devereux (2010)	2	Food	PSNP	X	Inconcl.	Trend +	Ins.		
ETH	Tafere & Woldehanna (2012)	2		PSNP	X	Inconcl.			Inconcl.	
ETH	Sabates-Wheeler & Devereux (2010)	2	Mixed	PSNP	X	Inconcl.	Ins.	Trend –		
CIV	Bertrand et al. (2016) – MT	1	PW HHs only, excl. compl. training	PEJEDEC-THIMO		Most. ins.		Trend +	Ins.	Ins.
CIV	Bertrand et al. (2016) – MT	1 Plus	+ self-empl. training	PEJEDEC-THIMO		Most. ins.		Trend –	Ins.	Ins.
YEM	Christian et al. (2013)	1		LIWP	X	Most. ins.	Most. ins.		Most. ins.	
ETH	Gilligan et al. (2009b)	2	Any transfer value	PSNP – HVFB	X	Ins.	Ins.			
ETH	Berhane et al. (2011/2014)	2 Plus	vs. Type 2	PSNP + OFSP	X	Cst. ins.	Ins.			Ins.
ETH	Berhane et al. (2011)	2 Plus	vs. Plus component	PSNP + HABP	X	Cst. ins.	Ins.			Ins.
ETH	Gilligan et al. (2009a)	2	High transfer value	PSNP	X	Cst. ins.	Ins.			Ins.
ETH	Gilligan et al. (2009a)	2 Plus	Any transfer value	PSNP + OFSP	X	Cst. ins.	Ins.			Ins.
ETH	Sabates-Wheeler & Devereux (2010)	2	Cash	PSNP	X	Cst. ins.	Ins.	Ins.		
MWI	Beegle et al. (2017)	1		MASAF III		Cst. ins.			Cst. ins.	Cst. ins.
CIV	Bertrand et al. (2016/2017) – MT	1 (Plus)	All PW HHs, incl. compl. training	PEJEDEC-THIMO		Cst. ins.		Ins.	Ins.	Ins.
CIV	Bertrand et al. (2016) – MT	1 Plus	+ wage-empl. training	PEJEDEC-THIMO		Cst. ins.		Ins.	Ins.	Ins.
ETH	Gilligan et al. (2009a)	2	Any transfer value	PSNP	X	Trend –	Trend –			Trend –
ETH	Gilligan & Hoddinott (2007)	1		EGS	X	Trend –	Trend –			
	ETHIOPIA OVERALL				X		Inconcl.	Most. ins.	Single st.	Inconcl.
	REST OVERALL						Trend +	Inconcl.	Most. ins.	Inconcl.

6.1.6 Agriculture

Of the 27 studies where impacts on agriculture were investigated, 20 relate to Ethiopia of which, in turn, all but one is from the PSNP and its various variants. Five of them are Plus components, i.e., no PWP as such. The agricultural outcomes are grouped into two main categories: agricultural production and agricultural technology. The first category comprises grain production output, grain acreage and grain yield. The second category comprises expenditure on farm equipment and crop input, fertiliser use (quantity used and whether any fertiliser was used), dummy variables for pesticides use, improved seed use, irrigation use, stone terracing, fencing and water harvesting. The overall picture across the diverse outcome areas and programme variants is inconclusive for Ethiopia and the other countries, but a differentiation by PWP type and variant for each of these two categories yields some insights.

Regarding agricultural technology adoption, the **regular Type 2 Plus** variant of the PSNP (i.e., plus OFSP/HABP) overall performs well and it outperforms the regular Type 2 variant. In particular, fertiliser use and the adoption of stone terracing and fencing tend to increase. The same goes for improved seed use, but this has been investigated in just one study. The results are less unequivocally positive for more specific Type 2 Plus variants. If the complementary component consists just of irrigation services or just of seed services, the overall findings are inconclusive although the adoption of stone terracing increases. In the high value food basket area, results are mostly insignificant, with the exception of fertiliser use. These encouraging findings for agricultural technology do not in all cases translate into tangible increases in agricultural production. In fact, surprisingly, the best performers are some of the programme variants that performed worst in terms of agricultural technology adoption, especially the specific Type 2 Plus variant where the complementary component consists of just seed services and, to a lesser extent, where it consists of just irrigation services.

By contrast, the regular Type 2 Plus variant of the PSNP neither outperforms the regular Type 2 variant nor the main control group.²³ It merely leads to an increased grain yield compared to the Plus component alone, but no difference for output or acreage.

There are no indications that the **Type 2** variant has noteworthy effects on agricultural technology adoption or agricultural production. With respect to technology adoption, most results are not statistically significant. One study detected an increased use of fencing, an outcome that was not investigated in any other studies (Hoddinott et al., 2012). With respect to agricultural production, the only positive trend is detected for grain acreage in the HVFB area, but this did not lead to higher production or yield (Gilligan et al., 2009b).

Agricultural technology adoption has been rarely investigated in the context of **Type 1** programmes and agricultural production has been addressed in one single study of this type only. Two studies report impacts on expenditure on farm equipment (Côte d'Ivoire and Rwanda), two studies on fertiliser use (Ethiopia and Malawi) and one study on the expenditure on crop inputs (Rwanda). The study in Côte d'Ivoire detected an increase in expenditure in the short term, but it did not persist in the medium-term for any of the programme variants (including the Type 1 Plus) and no impact was found in Rwanda. Fertiliser use in the Malawian study did not increase despite the programme objective of creating complementarities with the country's fertiliser subsidy scheme. By contrast, the Ethiopian Type 1 PWP (FFW) found that the share of households using fertiliser increased, but even those that used fertiliser did not increase the quantity of fertiliser used. In other words, it detected an increase at the extensive margin but not at the intensive margin. In the Rwandan study, neither an increase in expenditure on crop inputs nor in agricultural production output was detected.

23 | The main control group consists of PSNP beneficiaries that are in the programme for not more than a year.

Figure 6: Agricultural technology

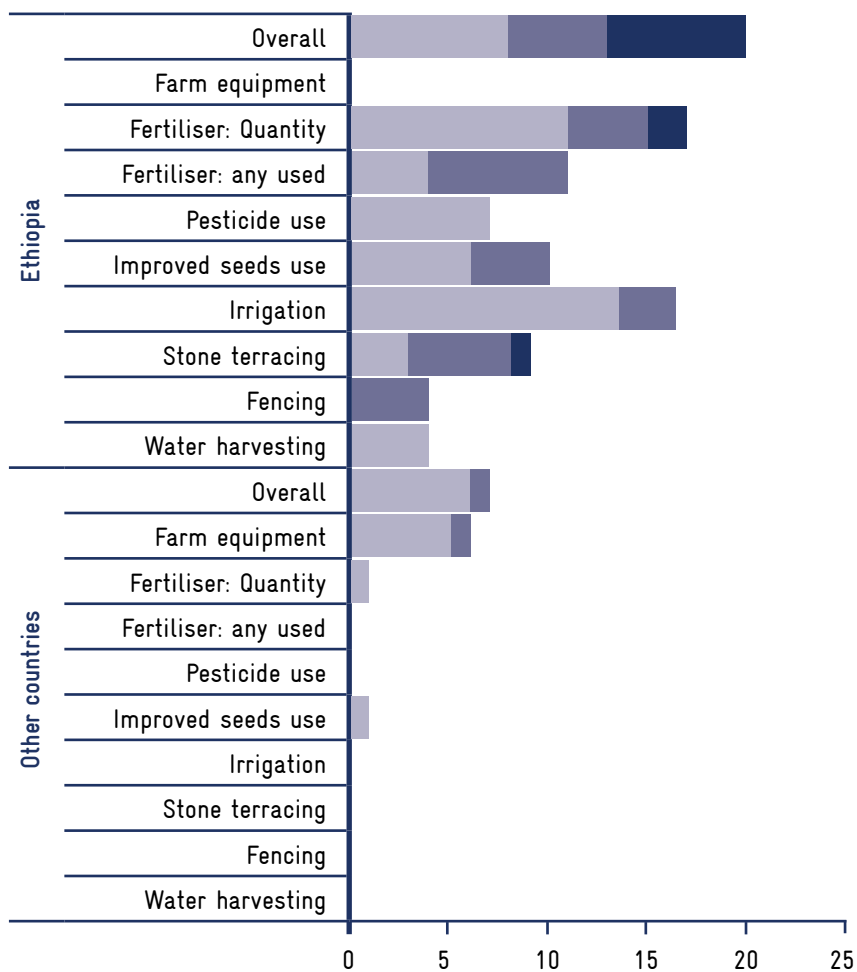
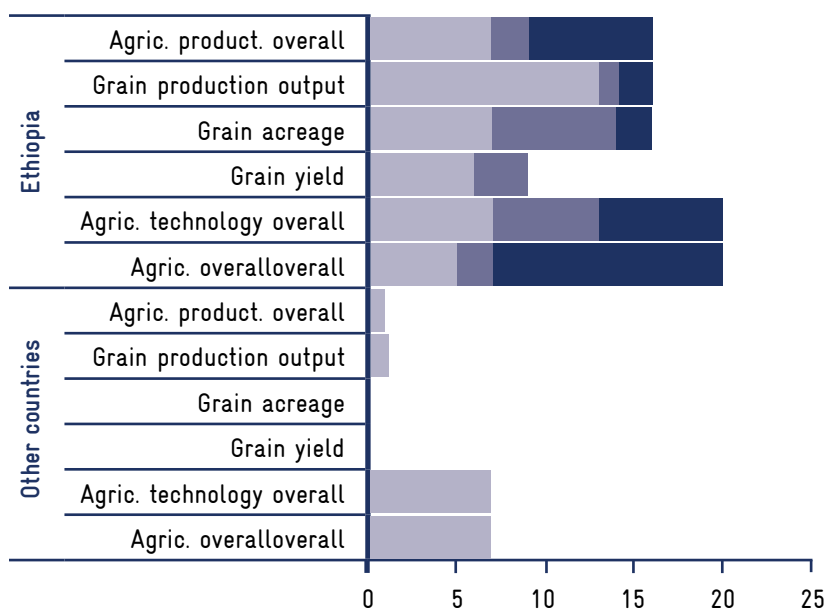


Figure 7: Agricultural production and agricultural overall



Studies with no significant effects
 Studies with significant positive effects
 Studies with inconclusive or significant negative effects

Table 11: Agricultural technology

Country	Study	PWP type	Treatment variation	PWP name		Overall	Farm equip-ment	Fertiliser use		Pesticide use	Improved seeds use	Irrigation	Technology adoption		
								Quantity	Any fertiliser used				Stone terracing	Fencing	Water harvesting
ETH	Gilligan et al. (2009b)	Plus	Irrigation services	OFSP	X	Cst. +		Cst. +					Cst. +		
ETH	Gilligan et al. (2009a)	2 Plus	+ complementary component	PSNP + OFSP	X	Trend +			Trend +		Trend +				
ETH	Hoddinott et al. (2012)	2 Plus	vs. no PW	PSNP + HABP	X	Trend +		Trend +					Ins.	Trend +	Ins.
ETH	Hoddinott et al. (2012)	2 Plus	vs. Type 2	PSNP + HABP	X	Trend +		Trend +					Trend +	Trend +	Ins.
ETH	Hoddinott et al. (2012)	2 Plus	vs. Plus component	PSNP + HABP	X	Trend +		Trend +					Trend +	Trend +	Ins.
CIV	Bertrand et al. (2016) – ST	1 (Plus)	All PW HHs, incl. compl. tr.	PEJEDEC-THIMO		Trend +	Trend +								
ETH	Gilligan et al. (2009b)	2 Plus	+ irrigation services	PSNP + HABP	X	Inconcl.		Inconcl.					Cst. +		
ETH	Gilligan et al. (2009b)	2 Plus	+ seed services	PSNP + HABP	X	Inconcl.		Inconcl.					Trend +		
ETH	Gilligan et al. (2009b)	Plus	Agric. production enhancing services	PSNP – HVFB	X	Inconcl.		Ins.	Trend +	Ins.	Trend +	Ins.			
ETH	Gilligan et al. (2009b)	Plus	Irrigation services	PSNP – HVFB	X	Inconcl.		Ins.	Trend +	Ins.	Trend +	Ins.			
ETH	Gilligan et al. (2009b)	Plus	SWC services	PSNP – HVFB	X	Inconcl.		Ins.	Trend +	Ins.	Trend +	Ins.			
ETH	Bezu & Holden, 2008	1		FFW	X	Inconcl.		Most. ins.	Trend +						
ETH	Gilligan et al. (2009b)	2		PSNP	X	Inconcl.		Cst. ins.					Inconcl.		
ETH	Hoddinott et al. (2012)	2	vs. no PW	PSNP	X	Most. ins.		Ins.					Ins.	Trend +	Ins.
ETH	Gilligan et al. (2009b)	2 Plus	+ agric. production enhancing services	PSNP – HVFB	X	Most. ins.		Ins.	Trend +	Ins.	Ins.	Ins.			
ETH	Gilligan et al. (2009b)	2 Plus	+ SWC services	PSNP – HVFB	X	Most. ins.		Ins.	Trend +	Ins.	Ins.	Ins.			
CIV	Bertrand et al. (2016) – MT	1 (Plus)	All PW HHs, incl. compl. tr.	PEJEDEC-THIMO		Ins.	Ins.								
CIV	Bertrand et al. (2016) – MT	1	Only PW HHs w/o compl. tr.	PEJEDEC-THIMO		Ins.	Ins.								
CIV	Bertrand et al. (2016) – MT	1 Plus	+ self-empl. tr.	PEJEDEC-THIMO		Ins.	Ins.								
CIV	Bertrand et al. (2016) – MT	1 Plus	+ wage empl. tr.	PEJEDEC-THIMO		Ins.	Ins.								
ETH	Gilligan et al. (2009a)	2 (Plus)	Any transfer value	PSNP	X	Cst. ins.			Ins.		Ins.				
ETH	Gilligan et al. (2009a)	2 (Plus)	High transfer value	PSNP	X	Cst. ins.			Ins.		Ins.				
ETH	Gilligan et al. (2009b)	Plus	Seed services	OFSP	X	Cst. ins.		Cst. ins.					Ins.		
ETH	Gilligan et al. (2009b)	2		PSNP – HVFB	X	Cst. ins.		Ins.	Ins.	Ins.	Ins.	Ins.			
ETH	Gilligan et al. (2009b)	2 Plus	+ irrigation services	PSNP – HVFB	X	Cst. ins.		Ins.	Ins.	Ins.	Ins.	Ins.			
MWI	Beegle et al. (2017)	1		MASAF III		Cst. ins.		Cst. ins.							
RWA	Hartwig (2013)	1		VUP		Cst. ins.	Ins.				Ins.				
ETHIOPIA OVERALL					X		Single st.	Inconcl.	Trend +	Single st.	Inconcl.	Single st.	Trend +	Single st.	Single st.
REST OVERALL							Single st.	Single st.			Single st.				

Table 12: Agricultural production and agriculture overall

Country	Study	PWP type	Treatment variation	PWP name		Agric. prod-uct. overall	Grain production output	Grain acreage	Grain yield	Agric. technology overall	Agric. overall	
ETH	Gilligan et al. (2009b)	2 Plus	+ seed services	PSNP + HABP	X	Trend +	Ins.	Trend +	Trend +	Inconcl.	Inconcl.	
ETH	Gilligan et al. (2009b)	Plus	Seed services	OFSP	X	Trend +	Trend +	Trend +	Ins.	Cst. ins.	Inconcl.	
ETH	Gilligan et al. (2009b)	2 Plus	+ irrigation services	PSNP + HABP	X	Inconcl.	Inconcl.	Cst. ins.	Cst. +	Inconcl.	Inconcl.	
ETH	Gilligan et al. (2009b)	Plus	Agric. production enhancing services	PSNP - HVFB	X	Inconcl.	Ins.	Trend +		Inconcl.	Inconcl.	
ETH	Gilligan et al. (2009b)	Plus	Irrigation services	PSNP - HVFB	X	Inconcl.	Ins.	Trend +		Inconcl.	Inconcl.	
ETH	Gilligan et al. (2009b)	Plus	SWC services	PSNP - HVFB	X	Inconcl.	Ins.	Trend +		Inconcl.	Inconcl.	
ETH	Gilligan et al. (2009b)	2		PSNP - HVFB	X	Inconcl.	Ins.	Trend +		Cst. ins.	Inconcl.	
ETH	Gilligan et al. (2009b)	2 Plus	+ irrigation services	PSNP - HVFB	X	Inconcl.	Ins.	Trend +		Cst. ins.	Inconcl.	
ETH	Gilligan et al. (2009b)	Plus	Irrigation services	OFSP	X	Inconcl.	Inconcl.	Inconcl.		Cst. ins.	Cst. +	Inconcl.
ETH	Hoddinott et al. (2012)	2 Plus	Type 2 Plus vs. Plus component	PSNP + HABP	X	Most. ins.	Ins.	Ins.		Trend +	Trend +	Inconcl.
ETH	Gilligan et al. (2009b)	2		PSNP	X	Most. ins.	Cst. ins.	Inconcl.	Cst. ins.	Inconcl.	Inconcl.	
ETH	Hoddinott et al. (2012)	2 Plus	vs. no PW	PSNP + HABP	X	Cst. ins.	Ins.	Ins.	Ins.	Trend +	Inconcl.	
ETH	Hoddinott et al. (2012)	2 Plus	vs. Type 2	PSNP + HABP	X	Cst. ins.	Ins.	Ins.	Ins.	Trend +	Inconcl.	
ETH	Hoddinott et al. (2012)	2	vs. no PW	PSNP	X	Cst. ins.	Ins.	Ins.	Ins.	Most. ins.	Most. ins.	
ETH	Gilligan et al. (2009b)	2 Plus	+ agric. production enhancing services	PSNP - HVFB	X	Cst. ins.	Ins.	Ins.		Most. ins.	Most. ins.	
ETH	Gilligan et al. (2009b)	2 Plus	+ SWC services	PSNP - HVFB	X	Cst. ins.	Ins.	Ins.		Most. ins.	Most. ins.	
RWA	Hartwig (2013)	1		VUP	X	Cst. ins.	Cst. ins.			Cst. ins.	Cst. ins.	
ETH	Gilligan et al. (2009a)	2 Plus	+ complementary component	PSNP + OFSP						Trend +	Trend +	
CIV	Bertrand et al. (2016) - ST	1 (Plus)	All PW HHs, incl. compl. tr.	PEJEDEC-THIMO	X					Trend +	Trend +	
ETH	Bezu & Holden, 2008	1		FFW						Inconcl.	Inconcl.	
CIV	Bertrand et al. (2016) - MT	1 (Plus)	All PW HHs, incl. compl. tr.	PEJEDEC-THIMO	X					Ins.	Ins.	
CIV	Bertrand et al. (2016) - MT	1	Only PW HHs w/o compl. tr.	PEJEDEC-THIMO						Ins.	Ins.	
CIV	Bertrand et al. (2016) - MT	1 Plus	+ self-empl. tr.	PEJEDEC-THIMO						Ins.	Ins.	
CIV	Bertrand et al. (2016) - MT	1 Plus	+ wage empl. tr.	PEJEDEC-THIMO						Ins.	Ins.	
ETH	Gilligan et al. (2009a)	2 (Plus)	Any transfer value	PSNP	X					Cst. ins.	Cst. ins.	
ETH	Gilligan et al. (2009a)	2 (Plus)	High transfer value	PSNP	X					Cst. ins.	Cst. ins.	
MWI	Beegle et al. (2017)	1		MASAF III						Cst. ins.	Cst. ins.	
ETHIOPIA OVERALL					X	Inconcl.	Most. ins.	Inconcl.	Inconcl.	Inconcl.		
REST OVERALL						Single st.	Single st.	N/I	N/I	Most. ins.		

6.1.7 Education

Of the 19 studies where impacts on education were investigated, 11 relate to Ethiopia of which, in turn, all but one is from the PSNP and its various variants. The outcome areas that have been aggregated for this assessment are grade attainment, relative grade attainment, enrolment, attendance, expenditure on education, expenditure on vocational training, and child cognitive abilities in math and languages (measured through test scores). Attendance and (relative) grade attainment are differentiated by gender. Overall, one has to conclude that the impacts of the analysed PWPs on education are limited, irrespective of outcome area, gender, country and PWP type and variant. Yet, some insights can be gained.

The only study of the **Type 2 Plus** variant of the PSNP (i.e., plus OFSP) that investigated education outcomes finds no impact on attendance for either gender (Hoddinott et al., 2009). This suggests, at least, that the increased labour supply by beneficiary households does not decrease the time children spend in school. This could have happened if they had to engage more in household chores.

Nine studies of the **Type 2** variant investigated education outcomes and some of them account for variations in the transfer level. The findings suggest that a higher transfer level leads to better education outcomes although it appears to affect boys and girls differentially depending on the outcome area. The only study that looks at grade attainment from this angle finds deteriorations when the transfer level is low for both sexes but especially for girls (Berhane et al., 2016). By contrast, a higher transfer value as paid in the PSNP since 2012 leads to improvements for girls, but has no effect on boys. The studies that do not make this differentiation find no effects (Tafere & Woldehanna, 2012; Woldehanna, 2009).²⁴ The only study

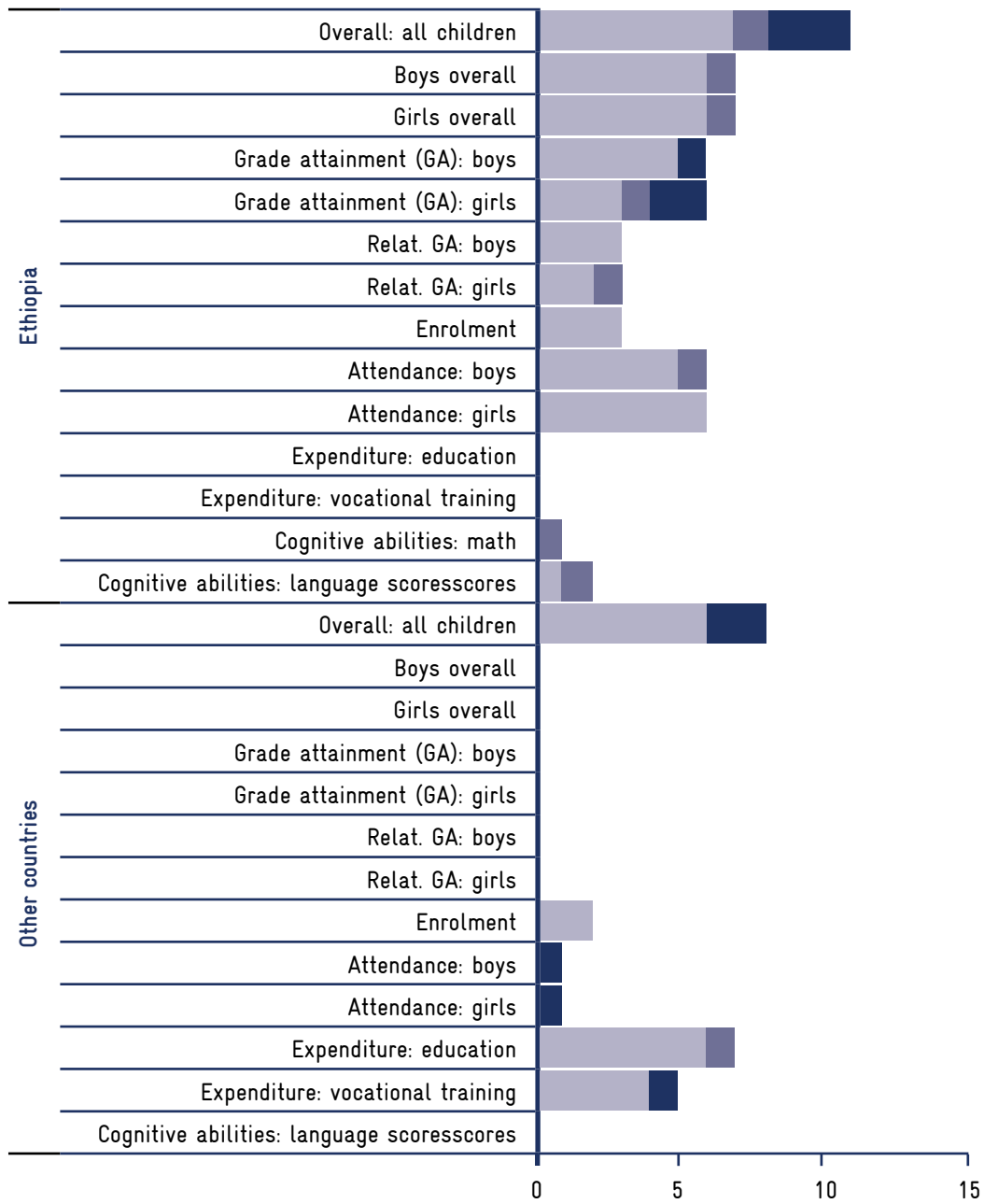
that investigates enrolment for the **Type 2** variant finds no impact, irrespective of the transfer level (Berhane et al., 2016). Equally, there are no strong indications of changes in attendance because of the programme although one of the two studies that differentiate by transfer level finds increased attendance for boys (Hoddinott et al., 2009). With respect to cognitive abilities, there are some encouraging findings drawn from the studies by Berhane et al. (2015) and Favara et al. (2017).

Nine studies investigated education outcomes of **Type 1** PWPs. Overall, there are no strong indications that such programmes affect education outcomes for better or worse. Five of those are different variants of the **Type 1 (Plus)** programme in Côte d'Ivoire which was implemented in a semi-urban context. This study only looks at expenditure indicators. While education expenditure is found to increase in the short-term and expenditure on vocational training to decrease, there are no effects in the medium-term for either variant. The studies covering Ethiopia, Rwanda, Sierra Leone and Yemen find no indication for improvements. The study from Sierra Leone even detects a reduction in attendance in rural areas, but not in urban areas.

To sum up, while there are no strong indications of widespread improvements in education outcomes through any of the programme types, there are some encouraging findings from the **Type 2** variant of the PSNP, especially if compared to the evidence for **Type 1** programmes. While there is insufficient evidence regarding the educational outcomes of the **Type 2 Plus** variant, the findings of the single study that addresses educational outcomes does not suggest that it performs better than the **Type 2** variant. Evidence regarding long-term effects does not exist to date.

²⁴ | This being said, Tafere and Woldehanna (2012) find a statistically significant improvement in grade-for-age performance for one of the three estimation methods they use, but not for the other two. No impacts are found on highest grade completed, irrespective of the method used.

Figure 8: Education



- Studies with no significant effects
- Studies with significant positive effects
- Studies with inconclusive or significant negative effects

Table 13: Education

Country	Study	PWP type	Treatment variation	PWP name		Overall		(Relative) grade attainment				Enrol-ment	Attendance		Expenditure		Cognitive abilities		
						All children	Boys	Girls	Boys	Girls	Relative: boys		Relative: girls	Boys	Girls	Educa-tion	Vocational training	Math scores	Language scores
ETH	Berhane et al. (2015)	2 (Plus)		PSNP	X	Trend +												Cst. +	
ETH	Hoddinott et al. (2009)	2 (Plus)	Higher transfer value	PSNP	X	Inconcl.	Trend +	Most. ins.					Cst. +	Most. ins.					
ETH	Berhane et al. (2016)	2 (Plus)	High transfer value (2012)	PSNP	X	Inconcl.	Cst. ins.	Trend +	Ins.	Trend +	Ins.	Trend +	Ins.	Ins.	Ins.				
CIV	Bertrand et al. (2016) - ST	1 (Plus)		PEJEDEC-THIMO		Inconcl.									Trend +	Trend -			
ETH	Favara et al. (2017)	2		PSNP	X	Inconcl.												Trend +	Cst. ins.
SLE	Rosas & Sabarwal (2016)	1		YESP/CfW		Inconcl.							Cst. ins.	Trend -	Trend -	Most. ins.			
ETH	Tafere & Woldehanna (2012)	2		PSNP	X	Most. ins.			Most. ins.	Most. ins.									
YEM	Christian et al. (2013)	1		LIWP		Most. ins.							Most ins.						
ETH	Berhane et al. (2016)	2 (Plus)	Medium transfer value (2010)	PSNP	X	Most. ins.	Cst. ins.	Most. ins.	Ins.	Trend -	Ins.	Ins.	Ins.	Ins.	Ins.				
ETH	Berhane et al. (2016)	2 (Plus)	Low transfer value (2008)	PSNP	X	Most. ins.	Most. ins.	Most. ins.	Trend -	Trend -	Ins.	Ins.	Ins.	Ins.	Ins.				
RWA	Hartwig (2013)	1		VUP		Ins.											Ins.		
ETH	Hoddinott et al. (2009)	2 Plus		PSNP + OFSP	X	Cst. ins.	Cst. ins.	Cst. ins.					Cst. ins.	Cst. ins.					
CIV	Bertrand et al. (2016) - MT	1		PEJEDEC-THIMO		Cst. ins.										Ins.	Ins.		
CIV		1 (Plus)				Cst. ins.											Ins.	Ins.	
CIV		1 Plus	+ self-empl. tr.			Cst. ins.											Ins.	Ins.	
CIV		1 Plus	+ wage empl. tr.			Cst. ins.											Ins.	Ins.	
ETH	Hoddinott et al. (2009)	2 (Plus)	Any transfer value	PSNP	X	Cst. ins.							Cst. ins.	Cst. ins.					
ETH	Woldehanna (2009)	2		PSNP	X	Cst. ins.	Ins.	Ins.	Ins.	Ins.									
ETH	Woldehanna (2009)	1		EGS	X	Cst. ins.	Ins.	Ins.	Ins.	Ins.									
ETHIOPIA OVERALL					X		Most. ins.	Most. ins.	Most. ins.	In-concl.	Single st.	Single st.	Single st.	Most. ins.	Most. ins.	Single st.		Single st.	Inconcl.
REST OVERALL													Most. ins.	Single st.	Single st.	Most. ins.	Single st.		

6.2 Putting it all together

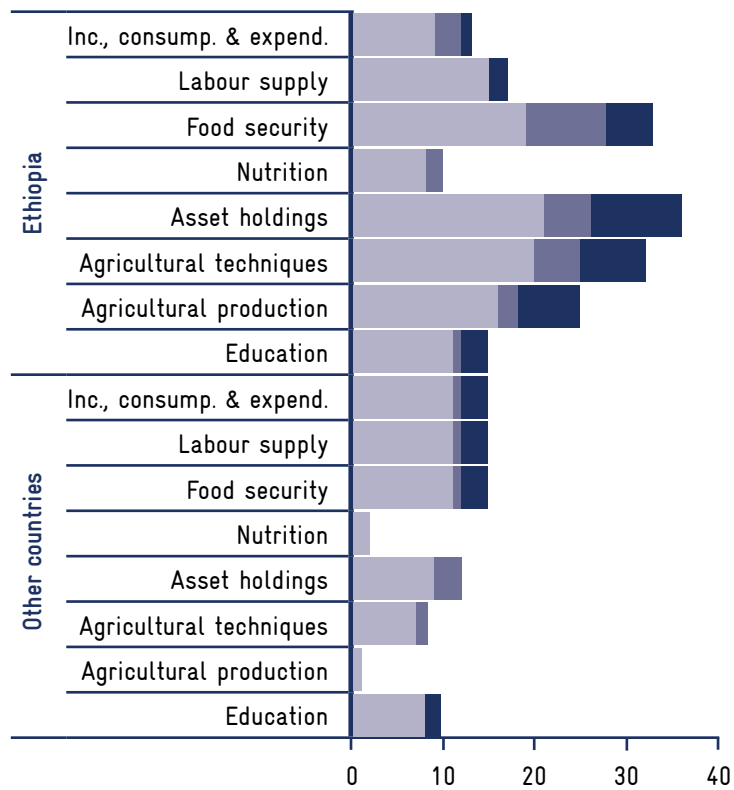
After having synthesised the results separately for each outcome area, the general evidence is summarized in Figure 9. For all outcome areas except for 'income, consumption and expenditures' the studies relating to Ethiopia account for more than half of all studies. The share of **studies that detect positive trends** (relative to the number of studies that investigate the respective outcome area) is low for all outcome categories. Even for food security, which is the outcome area with the highest share of studies showing positive trends, less than half of these studies detect positive trends. Moreover, this is strongly driven by studies of Ethiopia's PSNP and, thus an indication for the good performance of Type 2 programmes. For all other outcome areas neither the findings from Ethiopia (and, thus, mainly Type 2) nor from the other countries

(and, thus, Type 1) stand out as particularly positive. For most outcome areas, the few studies that detect positive trends mostly relate to Ethiopia's PSNP. The exceptions are income, consumption and expenditure (where it is fairly balanced) and labour supply.

The share of **studies that detect inconclusive effects or negative trends** is relatively high for asset holdings, agricultural outcomes and education.²⁵ The share of **studies that detect mostly insignificant effects** is by far the biggest compared to all other possible impacts. Their share exceeds 50% for all outcome areas apart from food security, asset holdings and agricultural production. Even for food security, where the share is the lowest, the share still stands at 37%.

25 | In those cases, it is, therefore, particularly informative to look at the disaggregation by sub-categories (as presented in the respective sections) rather than just at the aggregated patterns in Figure 9.

Figure 9: Evidence patterns for all outcome areas at a glance



- Studies with no significant effects
- Studies with significant positive effects
- Studies with inconclusive or significant negative effects

6.2.1 Cautious inferences about the role of the different vectors

Unfortunately, the available robust (quasi-)experimental evidence is largely silent on the role of the **asset vector** in achieving the observed outcomes. None of the analysed studies uses rigorous methods to isolate the role of the wage vector from the role of the asset vector. The only empirical insights are self-reported benefits derived from the infrastructure constructed through a Type 1 PWP in Yemen (Christian et al., 2013). Investigated outcomes are the time it takes to get water, the number of months of water shortage, travel time to the market and cost of trip to the market. Statistically significant improvements were only detected for the number of months of water shortage in communities where water-related projects were constructed (ibid., p.55).

Likewise, there are few studies that isolate the role of the **skills vector**. Outside the PSNP, the study of Bertrand et al. (2016/2017) is the only one that explicitly investigates it. Its two Type 1 Plus treatment arms (one offering complementary wage employment training the other self-employment training) does not outperform the regular Type 1 programme in any meaningful way. However, its external validity is limited due to the fact that in contrast to most other studies it was implemented in a (semi-) urban context. In short, while it cannot be ruled out that some of the studies implicitly

captured some benefits that materialised through the skills vector or asset vector, they probably capture mainly the benefits generated by the **wage vector**.

6.2.2 Cautious inferences about the role of design features

With respect to the role of design features, some cautious inferences can be made on the basis of the synthesised evidence. However, their generalisability is severely constrained by the small number of studies they are based on. Thus, more research is needed to further investigate these aspects.

Complementary training components: See discussion of the skills vector in the previous sub-section.

Linkage with a fertiliser subsidy programme: Fertiliser use in the Malawian study did not increase despite the programme objective of creating complementarities with the country's fertiliser subsidy scheme (Beegle et al., 2017).

Timing of PWP activities: The common practice, especially in rural settings, is to schedule the bulk of the PWP

activities during the lean periods when other employment opportunities are rare because it is expected to reduce the opportunity costs of participating in PWP. There is evidence relating to rural Malawi that it may not be necessary to stop all PWP activities during the peak season given that there appears to be some excess supply of labour all-year-round in contrast to other countries, especially Ethiopia (Beegle et al., 2017, p.10; Dillon et al., 2016). However, there are also no indications that impacts on food security differ if the timing of work cycles is varied in such a way (ibid.).

Frequency of payments: Judged on the basis of one single study relating to rural Malawi, there are no indications that varying the frequency of payments (several smaller instalments vs. fewer larger instalments) leads to differential impacts (Beegle et al., 2017). In fact, in this particular case none of the two approaches had any effect on food security.

Payment modality: The single study that quantitatively differentiated the impacts of three different payment modalities in the context of the early years of Ethiopia's PSNP (Type 2) found that the variants where wages were paid in food or in mixed form (food and cash) performed better

overall than the cash variant because the value of the latter was eroded due to price inflation (Sabates-Wheeler & Devereux, 2010). Yet, more studies are needed to confirm such differences in effectiveness.

Transfer value: While there are no RCTs where the transfer value paid to beneficiaries was deliberately varied as part of the study design, there are a few studies that found ways to compare the performance of beneficiaries that received different transfer amounts over the same period of time (Beegle et al., 2017; Gilligan et al., 2009a; Gilligan et al., 2009b). They did not find noteworthy differences. However, one must take into account that in all cases even the higher transfer value was relatively low from a social protection perspective.²⁶

Type of PWP: As stated earlier, the general expectation regarding differential impacts by PWP type is that Type 1 programmes are outperformed by Type 2 programmes which, in turn, are outperformed by Type 2 Plus programme. Overall, the available evidence does not refute this assertion but it also does not strongly support it either given that the findings are quite mixed. The nuances of the results are further discussed in the conclusion.

26 | In Malawi, it corresponded to 14% of the country's gross national income per capita (Beegle et al., 2017, p.1). In Ethiopia, the higher transfer value group comprised many households that received considerably less than what was foreseen by the programme at that time, namely a daily wage rate equivalent to the value of half a daily grain portion (Gilligan et al., 2009a, p.1691; Slater & McCord, 2013, p.43).

7. Conclusion

The most comprehensive report so far available on PWPs posits that ‘the effectiveness of [PWPs] as a safety net has been well established’ (Subbarao et al. 2013, p. 26). In light of the analysis and synthesis of the robust (quasi-) experimental evidence from which inferences about the effectiveness of PWPs can be made, one must conclude that this statement does not unequivocally apply to PWPs in low-income and lower-middle-income countries in Africa and the MENA region. The findings overall and in most outcome areas are too heterogeneous to warrant such a strong statement. Instead, the assumed benefits of PWPs can by no means be taken for granted, even with respect to the limited objective of enabling consumption smoothing.

In fact, for all the outcome areas investigated in this report that are expected to be positively influenced by PWPs, there are in each case some studies that support this expectation and some that do not. For all the outcome areas, we found at least some programmes that meet their objectives. We take this as evidence not that PWPs are ineffective per se but, rather, that they can be effective under certain conditions. These conditions include in particular the PWP’s specific design and implementation features.

Regarding **implementation**, it should be noted that compared to regular cash transfers, PWPs are much more demanding administration-wise, which introduces a number of additional potential pipeline breaks. While some of the (quasi-)experimental studies analysed in this review contain information on whether and where implementation fell short, they offer limited rigorous evidence of how this affected impacts.

In addition, differences in the design, especially the **transfer value**, may also explain some of the differences in observed outcomes. The main assertions regarding the transfer value, which are based on theoretical deliberations and the work of McCord (and others), are as follows:

- The social protection impacts realised through the wage transfer depend on the real value of the transfer for the household (i.e. excluding the monetary and non-monetary opportunity costs of PWP participation) in relation to the household poverty gap.

- The total transfer value (wage rate times employment duration) should therefore be commensurate with the programme objectives, the nature, extent and depth of poverty and vulnerability, and the labour market context in the country.

- Implementers must ensure that payments are made regularly as planned and in the planned amounts.

- The purchasing power of wage payments in cash should be monitored regularly and, where it is deemed necessary to achieve programme objectives, should be adjusted.

- If these conditions are not satisfied, impacts remain limited or are eroded.

In a nutshell, the evidence synthesised in this review does not refute these assertions. To the contrary, the absence of statistically significant effects in some of the low-wage PWPs provides suggestive evidence that corroborates several of the above assertions. At the same time, this evidence cannot fully substantiate these assertions as it lacks any example where all these criteria are clearly satisfied. In particular, none of the evaluated PWPs consistently paid a wage that would be considered adequate according to the criteria listed above. We cannot therefore point to robust empirical evidence when claiming that the impacts would be substantially higher and long-lasting if all these criteria were fully met.

With respect to the **question of which PWP model is appropriate in which context**, the main assertions (again based on theoretical deliberations and the work of McCord and others) are as follows:

- Programmes offering short-term employment at low wages (**Type 1**) are only suitable in contexts of acute poverty and to achieve a few basic objectives, such as enabling short-term consumption smoothing.

- In contexts where chronic poverty and underemployment are widespread and persistent throughout the year, having PWPs that pay adequate wages over an extended period (**Type 2**) may enable beneficiaries to (a) accumulate savings and assets that build a certain level of resilience against minor shocks and (b) accumulate assets and make productive invest-

ments that are at least sufficient to marginally boost post-PWP income. However, such PWPs are unlikely to reduce poverty on any significant scale and are not a complete substitute for responses to severe (especially covariate) shocks. In order to reach the poorest who ought to be reached and enable them to draw tangible benefits from employment that improve their livelihoods, the targeting mechanism needs to be more sophisticated than a system that relies solely on self-targeting based on low wages.

- If sustainable poverty reduction is the objective, Type 2 Plus models, which offer complementary measures and deliberately capitalise on linkages with other programmes, are the most promising options.

Judged solely on the basis of the robust (quasi-)experimental evidence synthesised in this review, we suggest qualifying these assertions as follows:

- There is indeed no evidence to suggest that **Type 1** PWPs can lead to impacts that go beyond consumption smoothing. However, even this is not guaranteed, especially if the wages paid are low in relation to the household poverty gap (which is typically the case in countries where chronic poverty and underemployment are widespread and persistent almost year-round).
- The PEJEDEC-THIMO scheme, which was implemented in a (semi-)urban context in Côte d'Ivoire, is the only example of a rigorously evaluated Type 1 Plus programme. The scheme offered complementary wage-employment training to some and complementary self-employment training to others. Neither of these two **Type 1 Plus** variants outperforms the regular Type 1 programme in any meaningful way.
- The findings relating to Ethiopia's PSNP (the only rigorously evaluated **Type 2** PWP in the region of interest) indicate that Type 2 PWPs can outperform Type 1 PWPs overall, but not in a consistent and substantial way. While the PSNP performs somewhat better in terms of improving food security and education, the findings are inconclusive regarding asset accumulation and disappointing regarding agricultural outcomes (technology adoption as well as production). In other words, the empirical evidence does not strongly support the assertion that

Type 2 PWPs are better than Type 1 programmes at facilitating asset accumulation and, thus, at putting households on a growth path.

- All in all, the **Type 2 Plus** variant of the PSNP (i.e. plus other food security programmes [OFSPs] or household asset building programmes [HABPs]) indeed outperforms the other PWP types. More precisely, it does well with respect to food security, asset accumulation (especially of livestock) and agricultural technology adoption. However, there are no strong indications that it generates an increase in income or agricultural output in the medium term. Moreover, no study has yet been published providing robust empirical evidence that a Type 2 Plus programme can sustainably strengthen the livelihoods of beneficiary households well beyond their time in the programme.

- **Additionally**, more research is needed to provide a better understanding of which complementary measures, accompanying a Type 2 PWP, may best facilitate successful graduation out of poverty.

Finally, it is critical to note that the overall cost-effectiveness of PWPs hinges on the **benefits arising from the assets created or services provided**. If substantial benefits are not derived from these sources, PWPs amount to nothing more than inefficient conditional cash transfer programmes that, at best, keep people occupied. Unfortunately, the rigorous evidence that is available largely fails to cover the role of the asset vector in achieving the observed outcomes and does not therefore offer empirical arguments for favouring public works over cash transfer programmes. For the time being, the case for PWPs rests mainly on assumed benefits. More research and thorough evaluations are needed to find out whether public works programmes can work and what design and implementation features are likely to enable them to realise their full potential. This review is a good starting point for this endeavour. Looking ahead, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), and the University of Passau are planning a collaborative research project on PWP experiences and experiments in Malawi, the aim of which is to close many of the remaining knowledge gaps.

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