



How to Make Public Works Work: A Review of the Experiences

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Abstract

This paper reviews the experience with public works programs (PWP) in several countries over the past 20 years to delineate use patterns and to determine the factors contributing to its use as a successful safety net program. The analysis shows that PWP have been used extensively in response to either a one-time large covariate shock, or repeated shocks. In low income countries, PWPs also have an antipoverty or poverty reduction objective. Our review shows that well designed and implemented PWPs can help mitigating income shocks; the program can also be used as an effective anti-poverty instrument. The paper examines the factors behind the observed wide variation in the effectiveness of the program in accomplishing its goals and identifies pre-requisites for making PWPs successful safety net interventions capable of protecting the poor from income shocks, thus reducing both temporal and seasonal poverty, while creating useful public goods or services for the communities. For PWPs to be successful, it is important firstly to: a) have clear objectives; b) select projects that can create valuable public goods; and c) ensure predictable funding. Secondly, the success of the program depends critically on careful design and incorporation of *all* the key design features. Finally, a credible monitoring and evaluation system designed right up front, prior to launching of the program can allow for mid course corrections and to respond to sudden changes which can inhibit effective implementation. The potential of the PWP program is enormous both in countries that have experiences with these programs and especially in countries that never used them. However, more research is needed to better understand the impact of PWPs, such as second round effects from the created assets, the impacts on the labor market, and their cost-effectiveness after factoring in both the immediate and second round benefits from its program.

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Keywords: Public works, workfare, transfers, social protection, social insurance, social assistance, targeting, poverty, labor market, wage rate, reservation wage, Africa, Latin America, South Asia

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Abbreviations

AFR	Sub-Saharan Africa
CRIMP	Central Region Infrastructure Maintenance Program
EAP	East Asia and Pacific
ECA	Europe & Central Asia
EPWP	Expanded Public Works Program
LCR	Latin America & Caribbean
NGO	Non-governmental organizations
MNA	Middle East & North Africa
PET	Programa de Empleo Temporal
PLANE	Plan Nacional de Empleo de Emergencia
PRIs	<i>Panchayat Raj</i> institutions
PWPs	Public Works Programs
RPS	Red de Proteccion Social
RMP	Rural Maintenance Program
SAR	South Asia Region
WDI	World Bank Development Indicators

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I. Introduction

Public work programs have been an important counter-cyclical safety nets instrument used in diverse country circumstances at different points in time in both middle income and low income countries. Typically, a public work program (or workfare)¹ is the one where a federal or a provincial government or a donor agency or an NGO finances and/or implements a program that creates temporary jobs for workers². The output of such a program is twofold: jobs of short duration for workers to increase their income, and creation of public goods in the form of new infrastructure or improvements of existing infrastructure, or delivery of services. Inputs are wage cost (in cash or kind³), managerial costs and material costs. The outputs in turn are expected to lead to three final outcomes (impacts): (a) increased income and consumption-smoothing, (b) a reduction in poverty and poverty gap ratio, and (c) infrastructure development. Public works program can have all three outcomes as main objectives but any combination of outputs, inputs and outcomes is possible.

Countries have introduced public works programs with diverse objectives such as protection from large covariate shocks (such as natural disasters, macro crisis, or seasonal labor demand shortfalls), to protect households from temporary job losses, fight against poverty, or to help poor to gain more temporary employment. Moreover, public works program could be regarded as one of the few safety net programs with a history dating back in recent times to the 1930 in the United States, and mid-1940s in Germany when the program was launched in the wake of post-war reconstruction⁴. More recently, countries in almost all regions of the worlds and at different levels of development (middle income, low income) have launched the program, driven by one motivation or another. Countries like India and Bangladesh have a long history and experience with public workfare programs to fight against chronic poverty⁵ and address work

¹ Throughout this paper, “public works” and “workfare” are used interchangeably to represent the same type of intervention.

² The agency that finances the program does not necessarily need to be the agency that implements the program. Indeed, there are now currently a variety of public-private-donor partnerships in financing and implementing of public works programs in different countries (see section 3).

³ Programs with remuneration in-kind are usually referred to as Food for Work (FFW) and those with remuneration in cash are referred to as Cash for Work (CFW). Historically most programs have been in kind, the Civilian Conservation Corps in the United States, used to provide aid to less well-off citizens, can be considered as antecedents to cash for work (CFW) programmes. CFW are used more often as an alternative to FFW, in all settings included post-disaster and conflict environments

⁴ As a matter of fact there have been other experiences with public works programs in the past. See for example the experience of the Poor employment act of Victorian England in the eighteen century, used to hire surplus labor to build canals and roads and draining marshes and laid the foundations of the industrial revolution, or even the experience of fourth century BC in India, or the pharos in ancient Egypt.

⁵ See Subbarao (2003).

shortages during the slack agricultural season. Public works program has also become an important conduit to deliver humanitarian assistance in post-disaster or post-conflict situations.

The long history, varying motivations, and the complexity of the program's many design features render the program less amenable to an understanding of what makes the program a success, and under what country circumstances, and when is the program likely to serve as a good candidate to accomplish the outcomes expected of it. While previous research (Subbarao, 2003) has explored the key design features accounting for program success, the effectiveness (or lack thereof) of the program under diverse country conditions, and the required program-specific systems of monitoring and evaluation to assess the effectiveness, is less well understood. There has been no critical review of program experience in the recent past, despite the fact that a number of countries have relied on this program instrument for many years and are planning to expand their role in the future. This is the case in Nepal, Bangladesh, Rwanda, and most notably of India, where the government has introduced a guaranteed employment for 100 days for the rural poor. This paper fills this gap.

Using the most recent program-specific secondary data on a range of countries which operated a public works programs over the past 20 years, this paper aims to delineate the factors accounting for the program's effectiveness. This is done by reviewing cross-country variations in the design, implementation procedures and delivery models. It then discusses methods for monitoring and evaluation specific to public works, and reviews results of studies completed thus far. This paper is essentially a survey of existing research rather than new research; yet it fills a gap inasmuch as no such comprehensive survey has yet been attempted. It is hoped that this survey paper will be useful to countries and/or donors or NGOs, intending to launch this program in the future, or planning to modify current design features or introduce effective monitoring and evaluation systems.

The remainder of the paper is organized as follows. The next section (II) provides an overview of the prevalence of the program and the main motivation (objectives) underlying the program by alternative country typologies. Section III reviews the available recent secondary data from the perspective of design features (wage fixing, labor intensity, and seasonality), implementation modalities and delivery models, and approaches to targeting. Section IV discusses the methods and data requirements for monitoring and evaluation of the program, and reviews the admittedly limited evidence on the outcomes and impacts of the program. Based on

the relationship between the pattern and design across a range of countries, Section V draws some tentative conclusions on how to make the program effective, and offers some suggestions for further research.

II. Objectives and rationale of PW programs

Public works programs are launched with various objectives in mind. Providing to poor households a source of income by creating temporary jobs is of course the most important motivation. In practice the objective of raising the income of the poor can be achieved by a number of specific objectives of public workfare program. These include: mitigation for covariate shocks (both unexpected and seasonal), mitigation for idiosyncratic shocks; antipoverty, and workfare as a bridge to more permanent employment. Of course, many of the objectives listed above are not mutually exclusive and they all raise the income of the poor. However, the proposed classification is helpful in pointing out possible trade-offs between alternative objectives and related design features such as the number of people to hire and the number of days of work offered, and so on. In addition, PWP also need to achieve complementary objectives of generating public goods for the community, which may in turn lead to secondary employment/income benefits.

2.1. Mitigation for Covariate shocks (one-time shock and seasonal)

PWPs provide an income transfer via wages to smooth consumption of poor households in the wake of a major shock such as economic crisis (including stabilization programs or other reforms causing sharp rise in unemployment and poverty) or natural disaster (i.e. flood, drought, earthquake) or seasonal shortfalls in employment and income (i.e. drought season, or agricultural slack season in low income agrarian economies). Most low income countries do not have formal unemployment insurance programs for a variety of reasons including feasibility (underdeveloped financial markets) and inability to finance the program. Typically in these countries the program runs intensively right after the crisis occurred or a few months in a year and then scaled down in better times.

The workfare programs launched soon after the macroeconomic crisis in East Asia in 1997, Latin America in 2002 and after the tsunami recently hit many Asian countries in 2005, are all examples of programs set up to mitigate the negative effects of a shock among the most vulnerable population. In Bangladesh, the Food for Work (FFW) has been operating since 1975 as counter-cyclical workfare program providing the rural poor with employment opportunities during lean (dry) season, mostly in construction and maintenance of rural roads, river embankments, and irrigation channels.

India is one of the few countries in the developing world to have implemented public works as early as 1950's, shortly after independence, with the main objective of providing temporary employment during the agricultural slack season. Unlike in some African countries, India over time developed in-house capacity to implement the program, so that when hit by a major drought, its program was ready to expand. This program came in handy when its country was hit by a massive drought in 1987, often known as the drought of the century. The program protected the poor from severe consumption shortfall (Rao, Ray, and Subbarao, 1988).

It is worth mentioning that the objectives of a public works program may well change over time. For instance, the Bolivia's Plan Nacional de Empleo de Emergencia (PLANE) was launched as a temporary intervention with the objective to generate employment for poor families in urban and rural areas during the economic crisis. Afterward, PLANE was extended and incorporated as permanent anti-poverty instrument in the Red de Proteccion Social (RPS), created by the government in 2004 due to the prolonged difficult economic and social situation. Similarly, in response to the severe economic crisis that hit Mexico in 1995, the government launched the Programa de Empleo Temporal (PET) to support the income of the most vulnerable and it is currently addressing the structural problems which inhibit income and employment generation. In Yemen, the Public Works Project was set up in 1996 with the overall development objective to mitigate the adverse effects of the economic adjustment⁶ through poverty alleviating measures targeted to the country's poor communities and the third phase is currently operating to provide the needed infrastructure and short term employment in the poorest rural areas of Yemen.

2.2. Mitigation for Idiosyncratic shocks (Insurance / Guarantee)

The motivation here is to guarantee employment at a low wage when demanded by workers. In other words, workers here enjoy the freedom to move in (when market wage is low or work not available) and out (when the market wage is better than the public works wage). So PWP here provides an "option price" to workers to be used when needed. In countries where there is no formal unemployment insurance, this program virtually performs an insurance function. The Maharastra Employment Guarantee Scheme in India, which is currently being

⁶ 'The Government of Yemen (GOY), since 1995, has been implementing an economy-wide reform program designed to stabilize the economy and stimulate sustainable growth. The stabilization program has been successful, with core inflation dropping from about 65 percent in 1994 to around 6 percent in 1997; this has lately gone up and expected to be around 10.5 percent for 2003. Reform measures included lowering of tariffs and other barriers to trade, moving from a multiple to a single market-determined exchange rate; moving to eliminate price controls; reducing regulations, licensing requirements, and other barriers to entry for new firms; and gradually cutting subsidies to public enterprises.' (Project Appraisal Document for a Third Public Works Projects, World Bank Report No: 27266, 2004).

nationally expanded through the ‘National Rural Employment Guarantee Act’⁷, falls in this category. Specifically, the Act mandates all state governments to provide at least 100 days of guaranteed wage employment to household’s adult members who are willing to do casual manual labor at the statutory minimum wage (Government of India, 2008).

2.3. Anti-poverty

PWPs designed as a major anti-poverty program provide substantive income support to poor families in countries with a large segment of poor unemployed or underemployed workers. In those cases, programs are launched and implemented pretty much throughout the year and are also likely to hire people for longer periods of time. Moreover they may also use explicit targeting mechanisms in addition to or instead of self-targeting induced by setting the wage rate at an appropriate level.

If the program disproportionately benefits the poor, and it is financed out of general tax revenue, and if the structure of the taxation in the country is strongly progressive, then public works programs can also perform a redistributive function. Whether or not the twin function – insurance and redistribution – are actually performed by public works program is an empirical question. This paper aims to assess the first function, but not the second. In addition, if the program leads to the creation of public goods in region/areas where disproportionately the poor live, the redistribution effect is further strengthened.

In Ethiopia, where food insecurity and poverty are widespread both in rural and urban areas, particularly in drought-prone districts, a potentially more effective way to reduce poverty has been recently used. With donors’ financial support, the government recently launched the ‘Productive Safety Net Programme’, a public works program⁸ that contributes to improving the productivity and efficiency of transfers to food insecure households, reducing household vulnerability, improving resilience to shocks through multi-year predictable resources rather than through a system dominated by emergency humanitarian aid.

In Bangladesh, the Rural Maintenance Program (RMP) and the food for assets of WFP select the beneficiaries using poverty criteria and then try to retain them for longer period of time.

⁷ The National Rural Employment Guarantee Act. The Gazette of India, No. 42 OF 2005, published on September 5, 2005. Posted at: <http://rural.nic.in/rajaswa.pdf>

⁸ The Productive Safety Net Programme consists of two components: (i) a labour-intensive Public Works component; and (ii) a Direct Support component to ensure support to those households who have no labour at all, no other means of support, and who are chronically food insecure. (Government of the Federal Democratic Republic of Ethiopia, December 2004, PSNP, Programme Implementation Manual).

The RMP⁹ provides year-round employment to approximately 42,000 destitute rural women for a period of up to 4 years. Their task is to maintain 84,000 kilometers of earthen rural roads around their villages across the country. The Food for Assets program provides a combination of food and cash wages and skill training for the ultra poor who participate in food for assets creation activities. Community infrastructure and physical asset building activities (e.g. fish ponds, tree plantation, raised homesteads, small drainage canals, irrigation systems, community shelters, raised central community areas, village connecting rural roads, river embankments, dykes etc) take place during the period of January to June. Overall the program employed 245,000 beneficiaries over a period of 2001-2005. Each participant received 2 kg wheat and taka 20 per day during the working months and 20 kg of wheat and taka 100 per month to participate in the training activities (Roy, 2006).

The anti-poverty objective does not motivate workfare programs only in low income countries, but also in higher income contexts facing structural unemployment problems, especially widespread among the poor. Whereas in low income countries the antipoverty objective is intended to provide income assistance to the chronic poor (which represent a high proportion of the population), as the country's level of income increases, a public work program is still intended to help the poor, but its focus is different, such as countering a situation of structural or rising unemployment, or to help specific fragments of the population.

In South Africa, for example, the 'Expanded Public Works Program'¹⁰ (EPWP) is one of the government's programs aimed at confronting the structural unemployment and for providing work opportunities for the unemployed. They provide work and training opportunities to more than one million people a year in four different sectors: a) infrastructure for labor-intensive construction and maintenance of low-volume roads, storm water drains, trenching for pipelines and sidewalks; b) environmental land rehabilitation, coastline cleanup and recycling program; c) Social care for aids patients and early childhood development; and d) economic participation in micro-enterprises learner ship program. The average length of the participation goes from four months in the infrastructure sector to over one year, thus providing a steady income for those beneficiaries.

⁹ For more details on RMP, see the website of CARE Bangladesh: <http://www.carebd.org/projects.html>

¹⁰ For details on the program, see the Government's website: <http://www.epwp.gov.za/>

2.4. As a bridge to employment

PWPs may include training as a core component in addition to the income transfer to encourage workers to acquire the needed skills to gain more permanent employment or become self-employed. The additional requirements attached to workers may include saving some of their wage earnings, learn technical skills, and eventually obtain a credit (at the going rate of interest) and begin an activity. However, cross-country experience is rather limited on this component.

A few programs have training components to direct women towards self-employment. In Bangladesh, the Rural Maintenance Program (RMP) requires the women participating into the program to attend income generating and skills training. In addition, they must save part of their wage on a regular basis (participants are paid a wage of 51 Taka per day with a forced savings of Tk10). The strategy is to create new micro-entrepreneurs with adequate skills training and seed capital from the forced savings (CGAP, 2006). A similar program was started in 1999 in two districts of the Central Region of Malawi, the Central Region Infrastructure Maintenance Program (CRIMP), a DFID–CARE program which employed 1600 poor women in rural roads maintenance.

Other programs have explicit training component thereby enabling workers to acquire the needed skills to transition into a more regular employment. *Jefes* program in Argentina included an *option* for participants to work or participate in training or education activities for 4–6 hours a day (no less than 20 hours a week) in exchange for the payment. The EPWP program in South Africa provide training opportunities beyond the skills acquired on the job to prepare participants for possible longer-term employment, self-employment, or further education or training. For example, youth employed as manual laborers on a labor-intensive roads project, may be offered training in unrelated building skills such as bricklaying, if there is demand for such skills in the labor market. The number of average training days varies from 10 days in the environmental sector to 30 days for those participating in social activities. As far as possible, all training must result in some type of accredited certification.

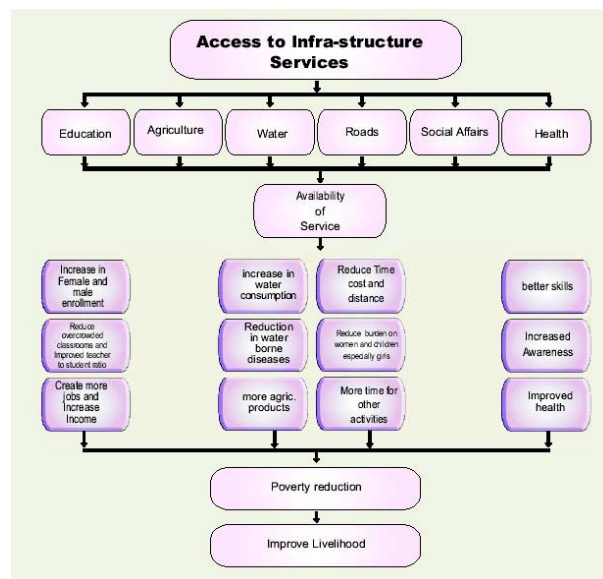
2.5. Complementary objectives and types of public goods and services provided

One important complementary objective of public works program is to generate public goods for the community. The list of actual goods and services that has been provided by public

works programs is very long and varies depending on the need of the countries and the level of income and availability of public infrastructure and services. These may include: a) creation, maintenance, or reconstruction (i.e. after natural disasters) of existing infrastructures, like roads, small bridges, schools, health posts, sanitation improvements; b) environmental and agricultural projects such as, irrigation, afforestation, soil conservations and watershed development; c) cleaning roads and other public facilities; and d) social services including day care, food preparation and so on. A detailed list of the types of activities undertaken by the public works programs is shown in Appendix 4. Here we present some notable examples to give an idea of the range of activities in a few countries.

In Yemen, public works projects respond to the immense need for access to infrastructure for basic social services such as schools, roads, health, and other sectors, intended to serve the poor and deprived communities especially in remote rural areas¹¹. Thus, they provide the much needed support for achieving poverty reduction as it is shown in Figure 1 below (<http://pwpyemen.org>).

Figure 1: Link between access to infrastructures provided by public works and poverty reduction in Yemen



Source: Yemen Public Works project, 2008

¹¹ Geographically, Yemen is distinguished by its dispersed communities that makes delivery of infrastructure services in terms of quality and cost a gigantic task, especially that PWP's investments are mainly in small scale projects (sub-project that cost less than US\$ 60,000 represent 88% of total numbers). Such a strategy is more effective when resources are limited, and ensuring maximum number of communities are reached (<http://pwpyemen.org>).

High labor intensive public works projects can be effectively used in the aftermath of natural disasters, for the rehabilitation and reconstruction of damaged or destroyed infrastructures. In Madagascar, the works performed mainly involve the reconstruction and/or repair of damaged basic infrastructure (roads, irrigation canals, small dams, bridges), and clean up of canals and routes following natural disasters. They are implemented by the FID (Development Intervention Fund) in the form of small-scale HLI projects in areas of the island mostly affected by cyclones and other disasters.

In addition to the above mentioned relatively well-known areas of public works activity, there have been some recent attempts to use public works in the wake of newly emerging crises, e.g., in response to HIV-AIDS crisis, in urban settings, in fragile states, and in preventing climate-change associated risks.

Public works response to HIV-AIDS related vulnerability. Creative ways have been devised to make effective use of public works programs in response to the challenge of HIV/AIDS in Southern and Eastern Africa. In this case the types of work performed include the support for social infrastructures in areas affected by high prevalence of HIV/AIDS such as providing Home Based Care (HBC), or Early Childhood Care and Development (ECCD) are responses to such a situation, with examples being the Red Cross's Home Based Care Programmes in Zimbabwe and Malawi, and the Working for Water ECD program in South Africa (McCord, 2005).

Public works in urban areas. Public works programs can also be rendered conducive to employing unemployed youth especially in urban areas. Clearly the design elements of the program need to be adjusted so as to encourage the youth to participate. For example, youth, while engaging in public works activities, may also like to be prepared to compete in formal labor markets. To facilitate such preparation, youth may be encouraged to undergo training in vocational and/or professional skills for two or three hours a day in an institution or as an apprentice to a master technician. A program of this nature is being developed in Kenya to engage the youth in urban slums in public works activity. Potential for engaging the youth in carefully designed public works activities in urban areas exists in a number of countries with high urban unemployment especially in the wake of the recent food and macro crises not only in African countries but also in some low income East Asian countries like Indonesia which are experiencing serious urban youth unemployment problem.

Public works in fragile states. Finally, public works program has proven to be a highly suitable intervention in fragile states coming out of years of conflict. These countries face severe development challenges such as weak institutional capacity, poor governance, political instability, and frequent ongoing violence. Notwithstanding these challenges, several fragile states have implemented public works program. For example, in Sierra Leone, soon after the conflict ended, a public workfare program was launched that helped rebuild the infrastructure damaged during the conflict, and also provide immediate short term employment opportunities to poor households who suffered immensely during the conflict, and also to ex-combatants. After the conflict ended, public works programs have been quickly launched and scaled up in Liberia, Yemen, Sierra Leone, Sudan, Guinea and Guinea Bissau. In Nepal, which has just emerged out of a decade-long internal conflict, a national public workfare program is being designed.

Climate change and risk prevention. PW can have a very important role in reducing and mitigating the risk of climate change by generating environmentally sound public goods. Some of the assets created can increase the resilience of the communities, such as water storage, embankments. Others projects such as afforestation, soil conservation projects, can help protect the environment from the adverse impact of climate change. Soil conservation projects carried out semiarid areas have been effective in slowing down the desertification, erosion and generating new forest areas. This is the case of projects carries out several years ago in Tunisia, where their impact is still visible, and still being done in the Sahel and in the Ethiopia PSNP, and in the arid zone in the Maharashtra state of India (World Bank, forthcoming WDR on climate change).

In Ethiopia, most of the activities under the PSNP are focused on soil and water conservation activities (Table 1) reflecting the needs of the poor agricultural communities. The works have already brought demonstrable benefits to the communities in the form of environmental transformation. For example, improved water conservation has led to increased agricultural productivity and an increase in groundwater recharge such that dry springs have started to flow again. In addition, the communities have enhanced income generation from area closure, and improved access to markets, education and health facilities (Grosh et al, 2008).

Table 1: Sample of Public Works Supported under the PSNP, Ethiopia 2007

Project	Result
Soil embankment construction (kilometers)	482,542
Stone embankment construction (kilometers)	443,148
Pond construction and maintenance (number)	88,936
Spring development (number)	598
Hang-dug well construction (number)	491
Land rehab. through area enclosure (hectares)	530
Small-scale irrigation canals (kilometers)	2,679
Tree nursery site establishment (number)	285
Seedlings produced (number)	301,778,607
Seedling planted (number)	12,883,657
Rural road construction (kilometers)	8,323
Rural road maintenance (kilometers)	20,458
School classroom construction (number)	340
Animal health post construction (number)	71
Farmer training center construction (number)	119

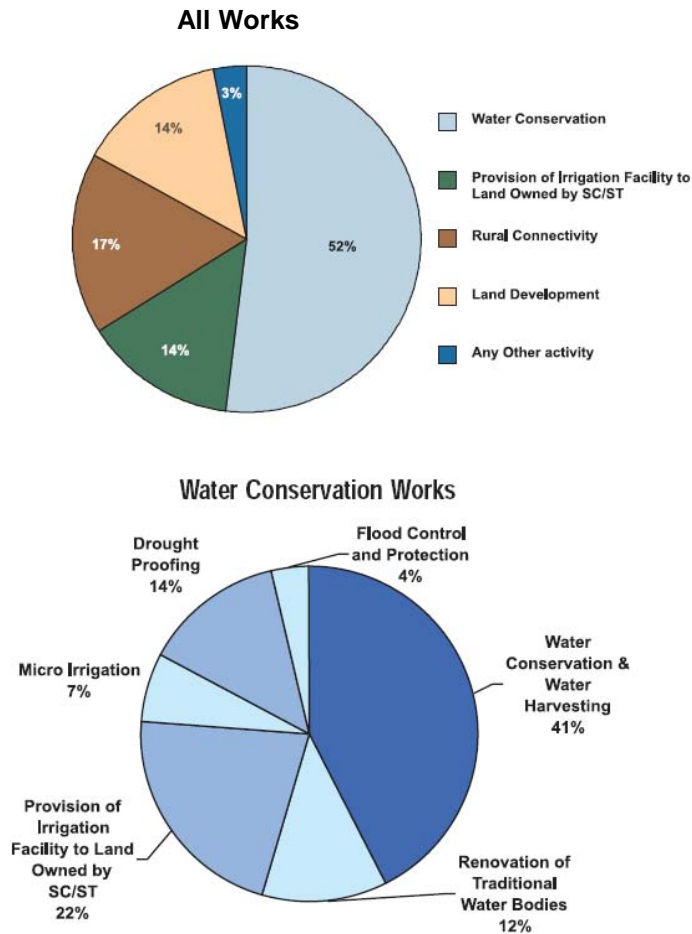
Source: Food Security Coordination Bureau, 2007.

Under the famous Maharashtra Employment Guarantee Scheme, roads and infrastructure were the main activities. Maharashtra has a huge dry and arid zone. Focusing on all types of irrigation structures substantially increased the areas under irrigation for a second crop, thus enhancing the scope for greater second round employment effect (Subbarao, 2003)¹².

In the National Rural Employment Guarantee Program of the Indian Government, emphasis is laid on activities that enhance agricultural productivity and generate long term dynamic income/employment gains. Available data reported in Figure 2 show that during the financial year 2007-08 more than 70 percent of planned works under the NREGA program are aimed at enhancing the growth potential of the farm sector.

¹² Labour coefficients for irrigation are largest in India (Rao, Subbarao and Roy, 1988).

Figure 2: Water conservation works under NREGA – Financial year 2007-08



Source: Government of India, Ministry of Rural Development. 2008.

Role of PW with respect to other programs and role of social assets. PW have a very important role in the overall poverty reduction strategy. However, PW must be combined with other targeted safety nets to provide the necessary support to labor constrained households and those that are chronically poor who cannot participate in public works. In fact in countries with widespread levels of unemployment and underemployment standard short term public works programs are unable to lift chronic poor out of poverty (Grosh *et al.* 2008; and McCord, 2007). However the social assets created with PWP might have an important role in alleviating constraints to higher returns for poor people, regardless of their participation into the program, as long as the public good produced are relevant, well executed and maintained. Some examples of use of public works in generating social assets are given below.

In middle income countries the type of activities included the provision of social services. In Argentina, the menu of projects eligible for financing by the Jefes program include also community services besides minor construction, repair, expansion, maintenance or remodelling of schools, health facilities, basic sanitation facilities, small roads and bridges, and on a pilot basis, some productive activities (World Bank Jefes ICR, 2007).

**Table 2. Subprojects with Project Co-Financing for Materials ¹³
under Jefes in Argentina (over 2003-2006)**

Types of project	Number
Educational Infrastructure	1834
Health infrastructure	1636
Sanitary infrastructure	80
Social Infrastructure	883
Productive and Development Infrastructure	251
Improvement of Neighborhood Conditions	169
Community Vegetables Gardens	65

Source: World Bank Jefes ICR, 2007

In South Africa also the types of public works projects under the EPWP include social and economic activities besides the more traditional infrastructure activities. This is reflected by two of the four sectors, which have been identified as having the greatest impact on employment creation, namely: (i) infrastructures, including large-scale initiative to use labor-intensive methods to upgrade rural and municipal roads, municipal pipelines, and storm-water drains; (ii) environment, creating work opportunities in public environmental improvement projects; (iii) social, creating work opportunities in public social projects (i.e. home-based care workers and early childhood development workers); (iv) economic, such as developing small businesses and cooperatives, including utilising general government expenditure on goods and services to provide the work experience component of small enterprise learnership / incubation programmes (<http://www.epwp.gov.za/>).

It is important to stress that although the provision of public goods is not the primary objective of the public works program, it is indeed crucial. There is no reason to do PW if the public goods generated do not have a positive impact on the community and are not built at a cost

¹³ Originally, two types of subprojects were envisaged. For the first (a) the project was to finance a share of the cost of materials as well as beneficiary payments; for the second (b) it was to finance only the payments to beneficiaries. Table 2 only provides a list of subprojects of the first type.

similar to that charged using hired contracting procedures. Therefore the success of a project depends on the quality of the public goods produced. Murgai and Ravallion (2005) confirm that if India's new National Employment Guarantee Scheme operates only for 100 days in the lean season, the scheme's real gains can be limited to the social value of the assets created, as poverty rates would fall only slightly from 34 to 31 percent at a fiscal cost equivalent to 1.5 percent of GDP.

2.6. Cross country patterns

Do countries show any pattern with respect to the implementation of public works programs in general and according to the objectives of programs and other key design features? For this analysis we have put together a database that includes all the available information from a total of 43 countries covering 49 public works programs, which have been implemented in the course of the past 20 years. The information, partly summarized in the Appendix 2 and 3, was collected using a variety of sources ranging from project documents, project websites, published and unpublished studies and papers covering programs and so on.

The information collected does not include the same information across countries and program and it is not representative, however it provides a remarkably interesting insight on the different objectives and features of many programs around the world. For example, we have information on objectives of the programs only in a smaller sample of 30 countries implementing a total of 37 PWPs¹⁴. The small sample of countries for which we have detailed information on objectives of the program renders delineation of patterns somewhat difficult and represents one of the limitations of the analysis in this section.

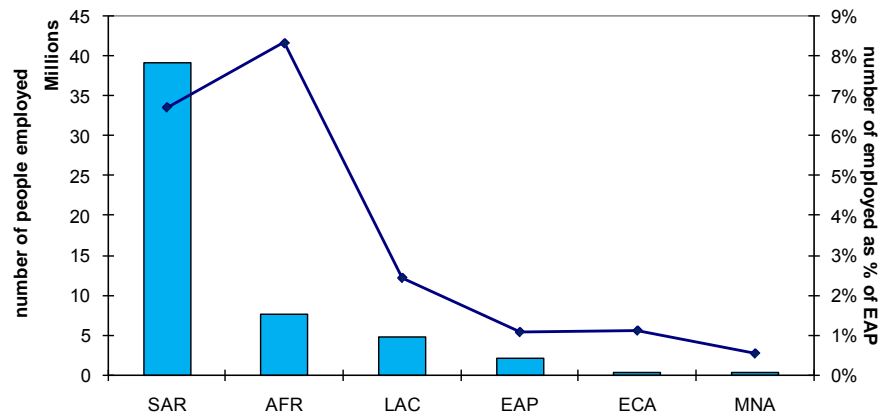
We start by looking at the distribution of programs by countries. Public works programs exist in many countries across all Regions, with South Asia and sub Saharan Africa being the dominant Regions implementing this program. As a corollary, a higher proportion of low income countries implement the programs, rather than higher income countries¹⁵.

¹⁴ We do not have complete information on the prevalence of PWPs in the past 20 years. Not all the countries had projects continuously operating for all 20 years. Most of the countries experienced projects that did not last very long, especially in Sub-Saharan Africa, and some other countries had very old projects that lasted longer time, like in South Asia (Bangladesh, India).

¹⁵ We used the World Bank classification of countries by income group, for 153 countries (high income countries excluded).

Then we looked at the distribution of PWP by number of participants. We consider two classifications: absolute number of participants by Region, and number of participants as percentage of active labor force by Regions (Figure 3). It is not surprising that the largest absolute number of participants happen to be in the South Asia Region, a Region that pioneered the program several decades ago and a region housing the largest number of poor persons, followed by Sub Saharan Africa Region (where the Ethiopia's PSNP provided work to over 7 million beneficiaries in 2006 and Latin America. In terms of absolute numbers, the program is negligible in other Regions.

Figure 3: Participation (as absolute number of yearly participants, and as share of the Economic Active Population (EAP) ¹⁶ in those countries), by Region.



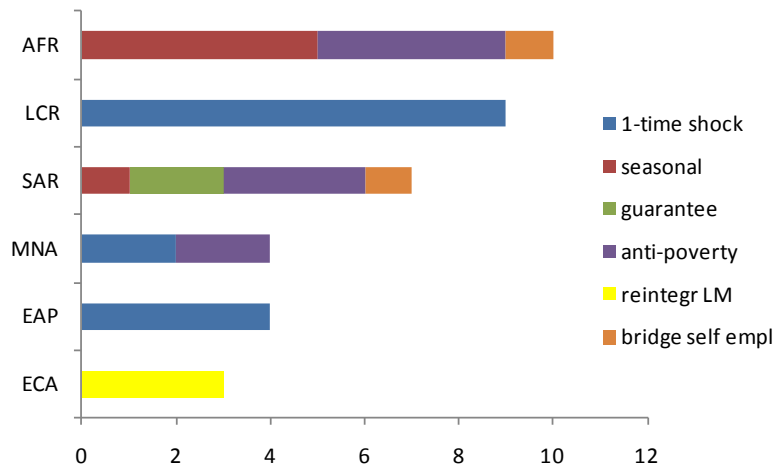
Source: Author's calculation based on various sources of information.
Note: Data on participation are available for 43 countries and 49 PWPs.

However, participants as per cent of economically active population show an interesting regional pattern. While the absolute number of participants in public works in Sub Saharan Africa is much lower than in South Asia, the percent of economically active population engaged in public works activity is about the same in both regions. By contrast, the absolute number of participants in all other Regions is much lower, but the public works activity is clearly not that insignificant when considered as per cent of economically active population. For example, as per cent of economically active population, the LAC region is about one third of South Asia and Africa Regions.

¹⁶ As a base to calculate the share, we refer to the sum of the economic active population in each country for which we have information on workfare programs, grouped by region (and not to the total economic active population within the region). Regional summary is calculated taking into account the sum of all participants and EPAs.

The pattern of distribution of programs by objectives is also quite interesting. Out of 37 public works programs, about 40% of projects were initiated to counteract the negative effects of covariate shocks, and about one fourth as an anti-poverty instrument. All other motives appear to be minimal. A more detailed analysis of a regional pattern in the objectives of PWP is reported in Figure 4. In Latin America, one-time large shock (such as a macro economic crisis) is the sole motivation for launching a workfare program. In sub Saharan Africa, the main motivation is to counter seasonal unemployment and as a poverty relief; in South Asia the motivation is largely as a poverty relief and counter-cyclical. In the Middle East and East Asia the motivations are to counter the hardship of a large one-time shock and as income transfer for the unemployed, whereas in Eastern Europe and Central the exclusive motivation of the program is to serve as an active labor market intervention. Thus the motivations seem to exhibit a pattern by regions rather than by other country-specific characteristics. This is understandable, given that countries in a given region have somewhat similar history and circumstances.

Figure 4: Distribution of workfare program objectives by Region



Source: Author's calculation based on various sources of information.

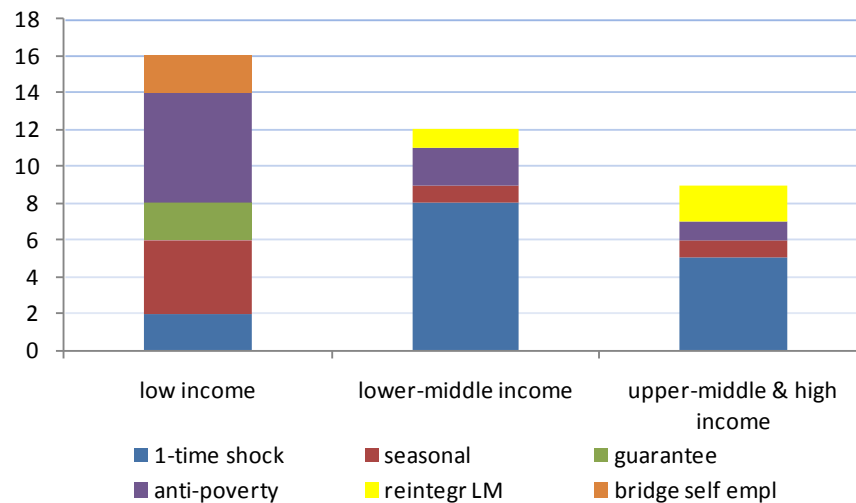
Note: This analysis is based on 30 countries implementing a total of 37 PWPs.

Do objectives of the program vary by income-group? This is shown in Figure 5. Not surprisingly, the antipoverty objective seems to motivate the launch of a workfare program mainly in low income countries. A one-time large covariate shock largely motivated middle income countries. The objective to serve as a bridge to more regular employment and as an insurance, are the motivations for a small number of countries in the low income group; and are

not the objectives in all other Regions. Likewise, PWPs operate as ALMP only in middle-high-income countries.

A one-time large covariate shock motivated countries both in low income and upper middle income categories. The program to serve as a bridge to more regular employment and as an insurance, are the motivations for a small number of countries in the low income group; and are not the objectives in all other Regions. Finally, PWPs operate as ALMP only in middle-income countries.

Figure 5: Distribution of workfare programs' objectives by level of income



Source: Author's calculation based on various sources of information.

Note: This analysis is based on 30 countries implementing a total of 37 PWPs.

Note: The y-axis represents the No. of programs in the sample with the same objective.

What do we learn from this cross-country picture? The dominant motivations for public workfare program for low income countries appear to be anti-poverty and as a program to cope with largely weather-induced shocks. The two motivations are really not mutually exclusive, since addressing a shock actually prevents the emergency of poverty traps. As for middle income countries, a large covariate shock – mostly induced by macro-economic or financial crises leading to a sharp rise in unemployment rates -- seems to drive them to introduce a public workfare program; all other objectives are less important.

It is worth stressing that at every stage be it design stage or implementation stage, countries implementing public works often have to face critical tradeoffs. For example, with a

given budget envelopment, a small number of individuals could be provided employment for longer periods albeit at a lower wage, or a larger number of individuals at a higher wage but for fewer days. Likewise, in the implementation stage, works can be completed rapidly but with higher capital intensity albeit employing fewer workers, or somewhat less rapidly using a higher proportion of labor. These tradeoffs and choices are discussed below at relevant sections.

III. Design features and implementation

The design features of a workfare program fall into four broad groups: (a) key implementation features that reflect the core characteristics and logic of the program and which significantly influence the overall cost and labor absorption potential of the program, such as the level of the wage rate, the numbers of hours worked, and the degree of labor intensity of works undertaken, (b) features that strongly influence the effectiveness of the program as a safety net, such as targeting method, seasonality of operations, and gender sensitivity of the program; c) financing methods and implication for local government and community involvement, and (d) features that impinge on the quality of the assets created and maintenance. These design features are discussed below and are followed by an analysis of their patterns across countries.

3.1. Key implementation features

The key implementation features include setting the wage rate and the labor intensity of activities.

The wage rate

Three wage rates have to be distinguished: (a) program wage which a workfare program pays to hired laborers, (b) minimum wage which is the statutorily fixed wage rate, and (c) the market wage, which is typically the unskilled market wage for laborers which may be either below or above the statutory minimum wage. In countries where the market wage is below the minimum wage (for whatever reasons including weak enforcement of the minimum wage), publicly funded program wage cannot be lower than the minimum wage, and hence it has to be higher than the local market wage for unskilled labor. If this happens, the scope for self-selection is ruled out because the program wage, now higher than the ruling market wage, is most likely to attract the non-poor to the workfare program.

There is much variation across countries in the relationship between the program wage, market wage and the minimum wage (see Table 3). The limited information available renders the delineation of any pattern quite difficult. In general, we can say that most of the countries in our sample did succeed in maintaining the program wage relatively low, among which some countries fared better than other.

Table 3. The relationship between Program Wage, Minimum Wage, and Market Wage

<i>Wpr in relation to Wmin and/or Wmkt</i>	<i>Country / Program and starting date</i>
<u>Wpr=Wmin>Wmkt</u>	Botswana LIPWP (1992), Wpr after 1998 India MEGS (1975), Wpr after 1988 India JRY (1989)
<u>Wpr=Wmin<Wmkt</u>	Argentina Trabajar (1996), Wpr before 2000 India MEGS (1975), Wpr before 1988 Colombia Empleo en Accion (2001) Uruguay PAC (2003)
<u>Wmin<Wpr<Wmkt</u>	Korea (1998)
<u>Wpr=Wmin</u>	South Africa EPWP (2004) Indonesia PK (1998) Thailand SIP (1998) Morocco PN (1960s) Zambia PW (2002)
<u>Wpr=Wmkt</u>	Egypt PWP (1993) Indonesia Merci Corps' CFW (2005) Somalia ACF's CFW (2004)
<u>Wpr<Wmin<Wmkt</u>	Argentina Trabajar (1996), Wpr after 2000 Argentina Jefes (2002)
<u>Wpr<Wmkt</u>	Bolivia PLANE (2001) Cape Verde FAIMO (1980s) Ethiopia FFW (1980), and PSNP (2005) Tanzania TASAF (2000) Afghanistan LIPW (2002) Bangladesh FFW (1974) Pakistan IGPR (1984)
<u>Wpr<Wmin</u>	Mexico PET (1995) Peru 'A Trabajar Urbano and Rural' (2002) Malawi MASAF (1995) Algeria IAIG (1994) Yemen (1996)
<u>Wmkt<Wpr<Wmin</u>	Botswana LIPWP (1992), Wpr before 1998 <u>Madagascar HIMO (FID) (2000)</u>
<u>Wpr=Wmin + social contributions</u>	Bulgaria (2002), Chile (1993)

Legend: Program wage (Wpr), Minimum Wage (Wmin), and Market Wage (Wmkt)

In countries where the program was kept *lower than the market wage*, a certain degree of self-selection of the poor into the program may have occurred, as it did in India's Maharashtra Employment Guarantee Scheme *prior to* 1988 (when the minimum and program wage doubled) (Subbarao 1997). Following the wage hike in 1988, the average monthly expenditures on EGS

fell as well as the number of person days of employment, leading to rationing of the program and consequently the erosion of employment guarantee (Subbarao, 1993; Ravallion *et al.* (1993); Dev, 1995; Subbarao *et al.* 1997; Subbarao, 1997;). Table 4 shows that there is high variation in the level of the minimum and casual wage across States in India in 1999/2000, and that on average, 75% of casual laborers worked for less than the minimum wage. This evidence suggests that an employment guarantee scheme in which the wage is set at the level of the minimum wage (which in many countries is higher than the market wage), would be extremely expensive for the Government and likely to result in poor targeting (by attracting the non-poor to the program – see O’Keefe, 2005).

Table 4. State agricultural minimum wage, average casual wage, and share of casual labor days

State	State minimum wage for agric. labor (Rs/day)	Avg casual wage (Rs/day) in 1999-00	% of casual labor days worked at less than state min. wage
AP	80	35	96.5
Assam	46	47	31.9
Bihar	59	36	93
Gujarat	60	40	73.4
Haryana	80	63	60.7
Karnataka	46	37	59.2
Kerala	91	91	40.1
MP	53	29	91.5
Maharashtra	45	34	63.9
Orissa	50	29	93.3
Punjab	82	68	58.5
Rajasthan	60	53	60.8
TN	54	45	51.5
UP	58	41	66.4
W.Bengal	62	44	83.9
All-India	---	40	75.2

Source: O’keefe (2005).

In a situation where the *market wage is higher than the minimum wage*, publicly funded program wage can still be set either at the level of the minimum wage, or even slightly higher than the minimum wage, but lower than the prevailing market wage. This type of wage setting is most likely to lead to self-selection of the poor in the program. In the PWP introduced by Korea following the financial crisis in 1998, the *program wage was set at a level slightly lower than the prevailing market wage* for unskilled labor to ensure that only those most in need would participate in the program. During the crisis, the market wage rate fell, and the public works

wage was adjusted downward several times to maintain self-targeting to the poorest (Subbarao, 1999 and Hur Jai-Joon. 2001).

However, in those countries where minimum wage is equal or above the market wage and restrictive employment laws prevent setting the wage below the minimum level, the possibility of using self-targeting mechanism is hindered. This is the case of Colombia's *Empleo en Acción*¹⁷ which is unable to self-select its beneficiaries due to the legal obligation to pay the minimum wage (and possibly benefits). Instead, *Empleo en Acción* uses other targeting mechanisms by limiting the eligibility to workers classified as categories 1 and 2 (lowest income quintiles) in the SISBEN¹⁸ (System for Selecting Beneficiaries of Social Programs), which is a proxy-means testing system that classifies people based on assessment of living conditions of individual families.

The choice of the remuneration method, daily rate/piece rate can also affect the targeting and outcomes of PWPs. Task based payment provides flexibility and may attract more women to worksites (Dev 1995, Subbarao *et al.* 1997) or allow several member of a family to share the work. However, task-based payments can be confusing and difficult to administer and might be exploited by the gang leader and cause delay, like EGS program (Pellissery, 2006).

In spite of the intent for self targeting, the program wage should be set in relation to the project goals. In the context of Somalia, a country afflicted by seasonal droughts and displacement of its population, migration and destocking are the most reliable and common coping mechanism in the area, traditionally served as a buffer against crop failure (Mattinen and Ogden, 2006). The salary offered by *Action Contre la Faim* in southern Somalia was set for the most part taking into account the restocking objective among the poorest households, at a level slightly above the daily going rate for casual labor¹⁹.

¹⁷ For more information on Colombia's Social Safety Net system, see: World Bank. 2002. Colombia Social Safety Net Assessment. Report No. 22255-CO, August 30, 2002.

¹⁸ For details on the Colombia's SISBEN, see: Tarsicio Castañeda. 2005. Targeting Social Spending To The Poor With Proxy-Means Testing: Colombia's SISBEN System. June 2005. Social Protection Discussion Paper Series No. 0529. <http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/0529.pdf>

¹⁹ During the first phase, each household received 330,000 Somali shillings for 10 days of work. The amount was increased to 400,000 Somali shillings for 12 days of work in the second phase, to take into account the depreciation of the shilling against the US dollar—the amount remained the same in US dollars (USD 29.9). The Somali shilling payment was augmented so as not to decrease purchasing power due to devaluation. During the third phase, the overall amount was increased to 700,000 Somali shillings or USD 47.6 for the completion of 20 days of work, enough to cover the purchase of three goats and basic items (Mattinen and Ogden, 2006).

On the other hand, the wage rate offered by public works programs should not be set at such a low level below the reservation wage (opportunity cost of labor) because, apart from not making a dent on seasonal malnutrition, it would exclude poor households that have higher reservation wage because of existing constraints and stigma. Barrett and Clay (2003) show that in Ethiopia FFW, imperfect factor markets caused poorer household to have a higher opportunity cost of labor, leading to inaccurate targeting outcomes. As a solution, they propose to add simple categorical variables to be used in combination with a variety of wage rates to exclude better off people with high reservation wage: such as too much land, some forms of capital, too many people in the households and so on.

Effective wage rate and numbers of hours worked

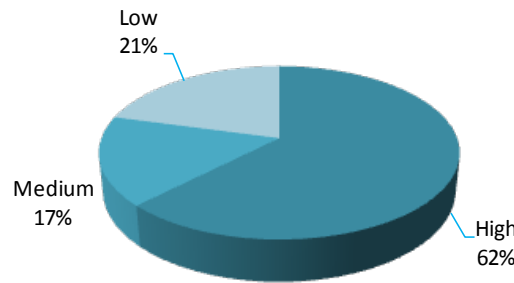
The numbers of hours worked has an impact on the actual wage rate and the participation in the program. It is not unusual in African setting to allow people to work 4 or 5 hours and get paid a full day wage. The rationale is to allow people to attend their fields. Unfortunately this policy increases dramatically the actual wage rate, thus attracting a large number of people to participate in the program. The common solution is to let all those willing to work participate into the program and ration the number of days worked. This has happened in Madagascar for example workers are required to work 5 hours daily in HIMO²⁰ projects (implemented by FID) for an average duration of 20 days, gaining a wage higher than the market wage for unskilled labor. Because of the high wages and the greater demand for employment than the employment opportunities created, almost everywhere a rotation system was applied to give a chance to work the largest number of poor people.

Labor intensity

Labor intensity of a public works operation reflects the percentage of the labor cost on the overall cost of project. It depends on a number of factors including the choice of the asset to be created, the wage rate and the ability of the agency implementing the program to budget adequately for non-wage costs. Information on labor intensity is hard to obtain. We have some indication of labor intensity only for about 19 countries (implementing 24 PWP). The data are shown in Figure 6. Clearly in almost two-thirds of the projects the labor intensity is higher than 60% clearly reflecting the fact that public works activity does provide significant benefits by way of short term employment to workers. Labor intensity is low (below 40 percent of total cost) only in about 21 percent of the projects.

²⁰ Note that HIMO is the French abbreviation for High Labor Intensive.

Figure 6: Labor intensity of PWPs (labor cost as % of total cost)



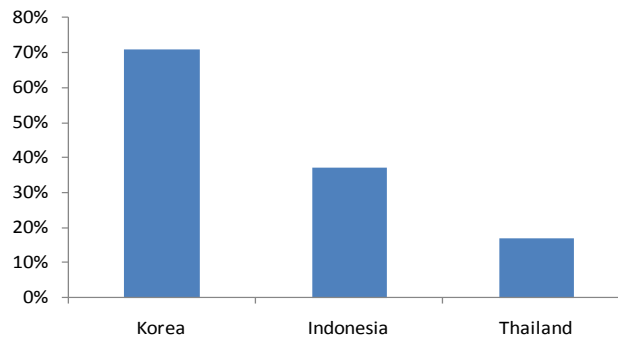
Source: Author's calculation based on various sources of information.

Note: this analysis is based on 19 countries implementing a total of 24 PWPs.

Legend: Low: less than 40%; Medium: between 41% and 59%; High: higher than 60%.

These averages however can conceal important inter-country differences. For example, in the wake of the financial crisis, both Thailand and Korea implemented a workfare program. Whereas in Thailand the labor intensity was less than 20%, it was over 70% in Korea (See Figure 7). The main reason for such a large difference in two similarly placed east Asian economies is because in Thailand the minimum wage was hiked periodically over the 20-year period that witnessed dramatic expansion of Bangkok city (which attracted laborers from the less developed eastern Thailand), so that when the crisis hit, the statutory minimum wage was high and the country was unable to adjust the program wage downwards. With a high wage, it could not implement a higher level of labor intensity. By contrast in Korea, the minimum wage was never raised; in fact during the boom period market wages in Korea rose sharply so that minimum wage almost became irrelevant. But when the crisis hit, Korea was able to quickly adjust the market wage downwards (and yet keep it above the very low minimum wage), thus enabling the country to run a public works program of high labor intensity (Subbarao, 1999). Thus, the degree of labor intensity depends a great deal on the wage rate and its historical evolution.

Figure 7: Labor intensity in activities selected for workfare, selected PWPs



Source: adapted from Subbarao (1999)

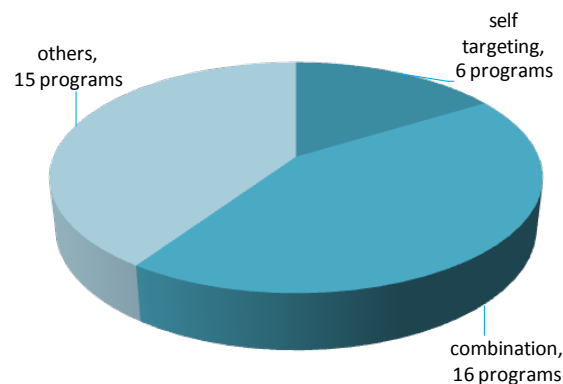
3.2. The design of safety nets features

The effectiveness of PW as safety nets instrument depends on the ability of the program to provide additional source of income to the most vulnerable population when it is most needed. This means that the design of public works programs should pay close attention to the need for additional or complementary targeting method in addition using the wage rate as the key self-targeting instrument as well as the length and timing of work. Specific design features also have an impact on the objectives of increasing female participation into the programs. Lastly, community participation and involvement are crucial for determining the usefulness and impact of projects locally.

Targeting Method

There is evidence showing that the use of multiple targeting methods makes the identification of the neediest more accurate and comprehensive, improving the targeting performance (Coady, Grosh, and Hoddinott, 2004)²¹. The use of pure self selection, for example, might be insufficient in reaching vulnerable groups in poor areas or when the demand for participation is very large and some form of employment rationing is needed. We distinguish broadly three approaches to targeting: (a) self-selection, (b) self-selection in combination with other methods, and (c) other methods including geographic targeting. Figure 8 shows the summary picture for all countries. It shows that the least popular method is self-selection alone, whereas the most popular method is a combination of self-selection and other (such as geographic or community targeting). More than one-third of sample countries opted for a method other than methods (a) and (b).

Figure 8: Distribution of countries by targeting method



Source: Author's calculation based on various sources of information.

Note: this analysis is based on 30 countries implementing a total of 37 PWPs.

²¹ Moreover, in their review of 128 social assistance programs implemented in 48 countries, CGH found that there is not a clearly preferred targeting method. In fact, 80% of the variability in targeting performance was due to differences *within* targeting methods and only 20% was due to differences *across* methods.

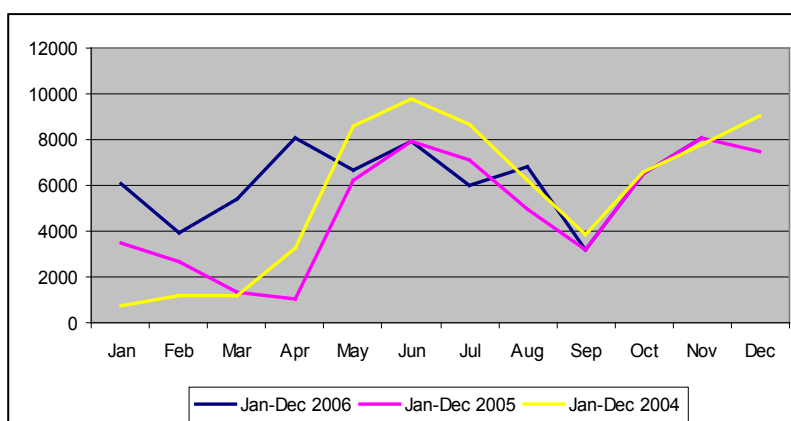
The use of poverty mapping for geographical targeting may help focus the areas with higher poverty concentration within the country. This has been done in Malawi, where targeting for participation in the MASAF public works occurs at two levels. The process starts with the identification of geographic areas based on the Vulnerability Assessment Mapping System (VAM) data, which takes into account factors such as food availability at the household level, the availability of coping mechanisms, and land. Then, the management unit of MASAF in conjunction with the Poverty Monitoring Unit (PMU) is responsible to develop a suitable index and cut-off point of eligible areas. Within the targeted areas, at the community level, wages are set below the minimum wage rate achieving self selection (MASAF, 2000). Similar to MASAF PWP, Argentina's Trabajar adopted a combination of geographical targeting and self selection through work requirement offering a wage rate which was initially set at the minimum wage (lower than the market wage) and subsequently lowered to a level below the minimum wage in 2000.

Seasonality of workfare operations

Ideally, the best time to run a public works program is when the opportunity cost of labor is low and more people are in need of a temporary source of income. Typically in most agrarian economies the opportunity cost of labor is low during agricultural slack seasons. However, even during the peak season, some workers may not be able to find work in normal economic activities. So if the program is to serve an "insurance" function, the program has to operate throughout the year, the intensity varying between the seasons. Country experiences differ a great deal with respect to the seasonality of works activity. Some countries have opted to run the program only during the agricultural slack seasons (for 4-5 months in a year) in which the program would serve "consumption-smoothing" function, but not an "insurance" function. Some countries have opted to run the program throughout the year with varying degrees of intensity providing both insurance and consumption-smoothing for poor households.

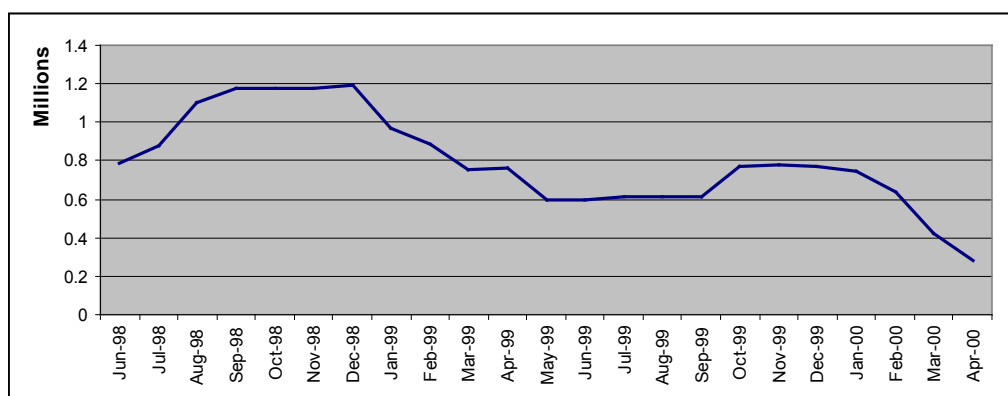
Figure 9 to 13 provide some examples of seasonality of operation for some countries for which we have detailed information. Both in the middle income countries of Brazil and Argentina, and the low income countries of India and Bangladesh, the program operated throughout the year, but clearly with greater intensity during the agricultural slack season. These four countries probably represent some "good practice" example of countries where the program served the functions of insurance, consumption-smoothing and poverty reduction. Bangladesh experience is particularly interesting.

Figure 9: Peru, Trabajar Urbano employment generated, 2004-2006



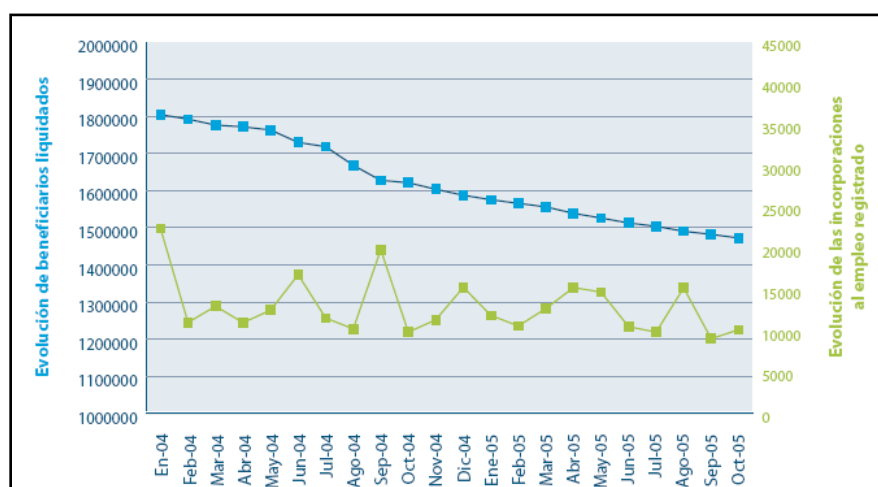
Source: Ministerio de Trabajo y Promoción de Empleo, various years.
Posted at: <http://www.atrabajarurbano.gob.pe/empleos.htm>

Figure 10: Brazil, Number of workers enlisted in the Northeast work front, 1998/2000



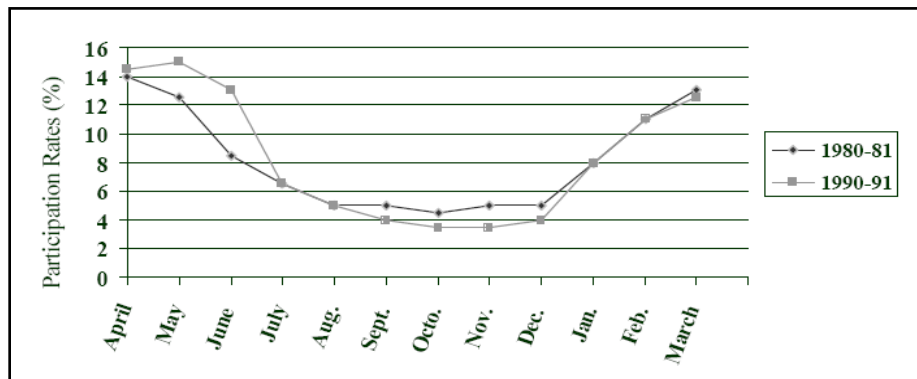
Source: Rocha (2001).

Figure 11: Argentina, Jefes de Hogar (beneficiaries enrolled in the program and beneficiaries who left the program to be registered in the formal labor market)



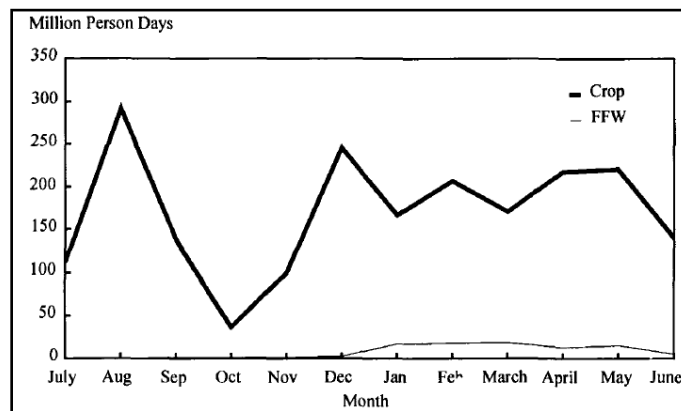
Source: Ministerio de Trabajo, Empleo y Seguridad Social (2005), Posted at: <http://www.trabajo.gov.ar/jefes/>

Figure 12: India, MEGS employment



Source: Subbarao (2003).

Figure 13 : Bangladesh, Crop-sector labor demand and employment under the food-for-work program (monthly averages)



Source: Ahmed, Zohir et al (1995). Note: labor demand in the crop sector is for 1990. Estimates for FFW are based on averages for 1989/90-1991/92, and the FFW wage is assumed to be 4.6 kilograms)

In Bangladesh Food for Works (FFW) program has been operating since 1975. It aims to create food-wage employment during the slack season, mostly in construction and maintenance of rural roads, river embankments, and irrigation channels. A major objective of the program is to provide income to the rural poor during the slack period when the unemployment rate in rural areas increases. Wage payments are made in kind (that is, in wheat or rice) rather than in cash. Such a practice is thought to stabilize food grain prices in the market and to improve food consumption and nutrition of the participating households before the following spring harvest. Over 85 percent of the FFW resources are used during January-May, which was the traditional slack season for agricultural activities during the early planning stages of the boro planting season. Moreover, labor intensive earth moving projects cannot be conducted during the rainy season, when part of the country is under water or the ground is too wet to allow any work.

However, with the rapid expansion of cultivation of irrigated boro rice and wheat crops, employment opportunities in the agriculture sector in many areas have increased to substantial levels during this season in recent years, thus creating the need for alternative type of activities and times of implementation for public works programs.

When countries implement public works to respond to regional crisis, seasonal consideration might be not be taken into account. For example, in Morocco, the country quickly launched a workfare program to address a regional crisis that arose in one region of the country. Other times, financial constraints or implementation delays may prevent the preferred seasonal allocation of projects. In Tanzania, for example, PWP subprojects were programmed to be carried out in the dry seasons so as to minimize disruptions of agricultural activities and enlist beneficiaries for the workfare program thus helping participants smooth consumption. However, delays caused by subproject preparation disrupted this arrangement.

There are also cases when year-round operation created problems inasmuch as it clashed with normal economic activities. For example, in Zambia, tension was created between the employment offered under a public works program and the need for labor for regular farming activities. Farmers chose to work for public works and as such may have spent less time on their own farms. Scheme operators tried to solve the problem by imposing a regulation that public works activity be confined to 4-5 hours a day, but found it difficult to implement the regulation, and raised the implicit daily wage rate. While there is no concrete evidence on the extent to which public works activity may have impacted adversely on farm output, the potential conflict between workfare activity and normal economic activity needs to be addressed preferably by adjusting the wage rate according to seasons. For example, a slight lowering of the wage rate during the peak season might have avoided the flight of labor away from normal economic activities. On the other hand, Afghanistan too ran the program during peak agricultural season and found it difficult to recruit persons for public works, probably because the wage rate was correctly set below the current agricultural wage rate.

Gender Sensitivity

The gender dimension of public works participation covers several concerns. First, the need to provide access to women to direct wage employment, to protect them from loss of earnings; second a woman's participation in the labor force and her control over resources is associated with substantially larger improvements in child welfare, and, women's health and

status; lastly women's benefits from assets created by PWPs (Dejardin ,1996; and Swamy, 2003). Swamy (2003) points to large variations in women's participation in such programs, depending on the general characteristics of the labor markets and the specific characteristics of the programs considered.

Design features of a PWP can be adapted in a number of ways to encourage female participation (Subbarao, 2003). Women may be given priority at the design or recruitment stage. In a number of projects analyzed, a minimum percentage of women participation is set in the project guidelines. For example, in Malawi (MASAF) and India (SGRY) the target was set at 30%, while in South Africa (EPWP) and Tanzania (TASAF) it was 40%. These targets may not be reached in the actual program implementation, as it happened in Zambia where women participation was set at 60% while only 46% participated. The type of payment may also have an impact on women participation. Subbarao (2003), for example, notes that wages in-kind or piece-wage payments may attract more women than men to work sites.

In Yemen, in selecting any sub-project, highest priority was accorded to schemes that benefited children and women most, such as schools for girls, all water projects (which benefited women and children disproportionately), women's training centers for income generating activities. The Ethiopia's Implementation Manual states that 'Public works are designed to enable women to participate, and priority is given to works which reduce women's regular work burden'.

The evidence on program's outcome to encourage women's participation in the production phase notwithstanding, there are still social barriers preventing women from actively participating in the planning process. For instance, in MASAF, while the target in terms of women's participation was more than achieved (MASAF, 2000), the percentage of women in PWP Project Management Committees (PMCs) was only 25% against the target of 50%. The reasons advanced are that women in very poor and vulnerable households are so involved in survival activities that the opportunity cost of sitting in meetings is too high to be afforded (World Bank, 2004).

Community involvement in project selection

Community involvement in the selection of sub projects has many advantages. First it will result in the creation of infrastructure/assets that are most needed by the community. Public works would then become a genuinely demand-driven activity. Second, it creates ownership of

the asset created and may lead to better maintenance of the asset (such as community water outlets). Third, it may help on the site supervision of the project by the community (and thus contribute to better quality of the asset created). Community involvement can be built into the design of the project. For example, sub project selection could be done at open village meetings, or by the elected representatives of the village.

Experience with respect to community involvement, like all other design features, varies a great deal across countries. In our sample of 37 PWPs, communities were involved in the identification of sub-projects to be undertaken in about 11 PWPs. The experience with respect to community involvement is particularly interesting in Yemen (see Box 1), which represents a success story of how to involve communities.

Box 1. Community ownership and sustainability of assets created: Public Works in Yemen

The PWP in Yemen was established in 1996 to help mitigate the adverse effects of the economic adjustment on the poor population, especially in rural areas, through the creation of jobs and the provision of needed infrastructure. The third phase (2005-2008) is currently under implementation.

Since its inception, it benefited poor communities mainly through its (indirect) benefits derived from the creation of quality assets. The level of direct benefits was somewhat reduced because contractors may hire own laborers from other areas. Active participation of poor communities is the corner stone in the success of delivered services. Their involvement encompasses:

- Identification, prioritizing and selecting sub-projects according to their needs;
- Contribution (in cash or in-kind) as prerequisite to implementation;
- Implementation and Operations and Maintenance (O&M) of projects.

This process increased community awareness of the program's development aspects and their understanding of implementation issues. Moreover, it promoted a strong commitment of ownership (also proven by their willingness to contributions, which reached 11% of total project cost during the second phase, 1999-2003), and improved their abilities to assume responsibilities of completed projects, thus guaranteeing sustainability.

During the second phase, PW generated about 95,000 person months of direct labor, and implemented 827 projects (out of 8,000 project proposed by communities) for a total cost of about US\$50.30million, mainly in the field of education facilities (57.3%), water (14.3%), roads (8%), and health (4.9%) (WB, 2003). These assets satisfied the needs of the most deprived communities: in fact, 80.5% of the subprojects were in the rural areas, where poverty in terms of lack of services, unemployment and weak economic conditions prevailed

Sustainability is also reinforced by other factors such as:

- The presence of a modern MIS, being continuously developed and updated;
- Professional training activities for contractors, PW staff, consultancy services;
- Retention of part of the total subproject cost for future O&M needs.

Thus, PW in Yemen represents a successful example of how **community ownership** strongly influences **sustainability** of assets created.

Sources: Al-Baseir, 2003; Government of Yemen, (website); and World Bank. 2003

In Malawi, in principle the selection of project type is also made at the district level in consultation with traditional leaders using Participatory Rural Appraisal methodologies. In practice, however, there were variations among the project sites, with some communities claiming that they were not consulted on the type of project while others reported that the projects were already requested by the communities even before being informed of MASAF funding. The project sites in the latter group had few implementation problems compared with the former. Once the poverty-stricken EPAs have been identified, the selection of projects is done through the District Assembly structures. If the poverty-stricken EPAs do not have projects on the District Assembly approved list that qualify for funding under the MASAF PWP, the request for such projects from the community is to be made through the District Assembly via the Area Development Committee and the Village Development Committee. This procedure was adopted because it was thought it would ensure adequate consultation between communities and their traditional leaders.

In India community involvement was least developed in all previous versions of workfare. However, in the most recent 100-day employment guarantee scheme, communities are sought to be involved in project selection. In Korea an interesting procedure was followed. It was stipulated that 50% of the projects were to be selected by communities (demand-driven) and the balance of 50% are to be selected by line Departments (supply-driven). Thus there is an interesting mix of both supply and demand-driven approaches. (Subbarao 1999)

3.3. Financing and other implementation arrangements

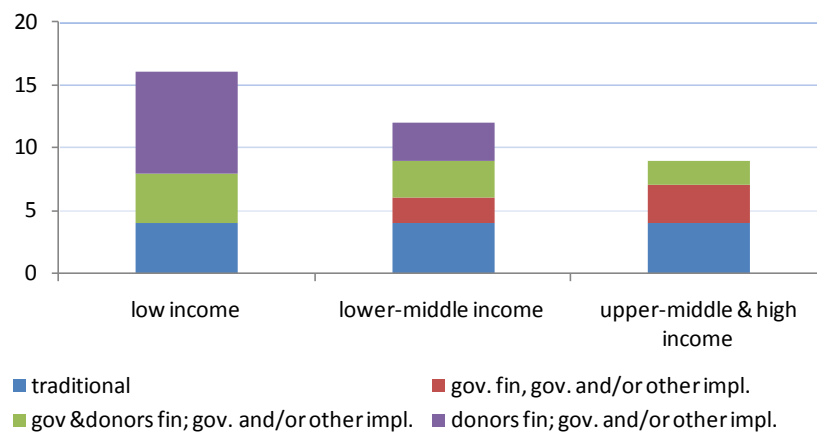
There is much variation across countries on who finances and who implements (executes) programs. In this respect, the term “public works” is actually misleading inasmuch as it gives the impression that it is entirely a government-funded and government-implemented program. That is not the case. In a number of countries one finds public-private-donor partnership in the financing and running of the program.

Subbarao *et al.* (1997) examine the characteristics of alternative delivery methods of social assistance programs, with focus on PWPs, based on program experiences. Depending on the entity who undertakes the funding and management of the program (service provision) and the actual creation of the infrastructure (the production), two general approaches can be identified: the first is a *traditional delivery model* (where government takes on both provision and production); and the second includes delivery models in which provisions and production are

carried out by a combination of Governments, private and donors. Thus, we can distinguish four delivery mechanisms: a) the traditional model (financed and implemented by the government); b) Government financed and implemented by others; c) Government and donors financed and implemented by others; and d) financed by donors and implemented by governments or donors.

The most common model in our sample is the ‘traditional’ one, where government both finances and runs the PWP (12 out of 37), followed by the combination of donors and government as funding agencies and either government or others as implementers (11 out of 37). An interesting finding is that the traditional model typically characterizes PWP in upper-middle income countries, while the combination of different actors seems to typify low income countries (Figure 14). According to the information available, as the level of income increases, the government is able to finance and implement a PWP on its own. Low income countries often do not have the financial, technical, and managerial capacities to launch and run a PWP, which explains their reliance on donors and/or NGOs for both funding and implementation.

Figure 14: Funding and implementing arrangements by income group

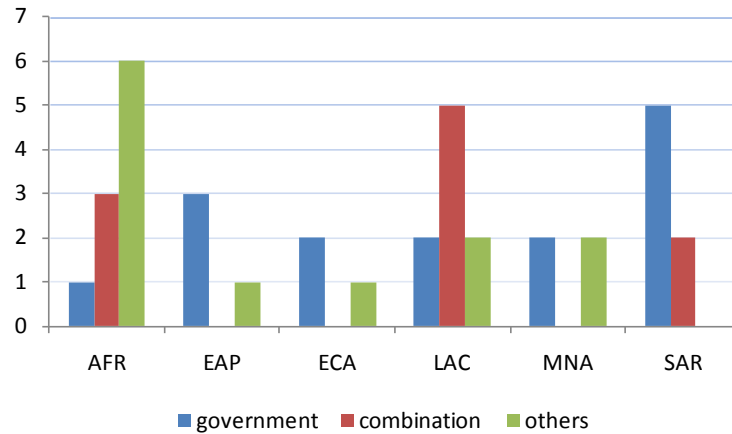


Source: Author's calculation based on various sources of information. Note: this analysis is based on 30 countries implementing a total of 37 PWPs.

In Figure 15 the regional pattern of implementation (regardless of funding), is analyzed. Some regional pattern is visible. Not surprisingly, workfare programs in South and East Asia are mostly run by the government as part of overall poverty reduction strategy; while in SSA other entities such as bilateral donors, NGOs, SF, private contractors, are responsible for running the program, with little domestic involvement in either funding or implementation.

Regardless of the pattern of the arrangement, a number of problems in implementation have arisen in different country settings. These can be classified into 4 groups (a) arrangements relating to financial flows, (b) availability of funds for non-wage expenses, (c) weak capacity especially in dovetailing managerial, technical and labor inputs at the actual project implementation site and the role of contractors; and (d) political economy factors. These are discussed below.

Figure 15: Implementing institution, by region (35 PWPs in 29 countries)



Source: Author's calculation based on various sources of information.

Note: this analysis is based on 30 countries implementing a total of 37 PWPs.

Financial flows and payment delays:

In countries which are decentralized, typically a part of the funds are allocated by the central (federal) government, to be supplemented by counterpart funds from provincial governments. Both these sources of funds have to reach the project sites in villages at the right time. In many countries such a convergence of financial flows has proven difficult. For example, in India, central government finances have to move from New Delhi to districts where these funds have to be matched by funds released by state governments. And from the districts the combined sources of funds have to move to villages where a workfare project is being implemented. In practice, often enormous delays occurred and actually funds are released from the center during the last quarter of the financial year which incidentally happens to be agriculturally busiest season when there is little need for a workfare program. The result has been low off take of the program (Saxena and Ravi, 2006)

The implementation of a PWP generally involves several activities, including managing the flows of funding, selection of projects, supervision, quality assurance, monitoring, reporting and evaluation. When multiple agencies are designated to carry out these activities, coordination problems may arise causing delays in payment of workers. For instance, the public works component of a donors-funded emergency project in Zambia reported a mixed implementation performance due to substantial delays in payment of contractors who in turn delayed payment of wages. In particular, delays were caused by poor coordination among the several institutions involved in the multiple layers of disbursement and approval²², exacerbated by a lack of proactivity (World Bank, 2006). The result was that payments were not always made at the critical time when people needed to buy food and other essential goods and services, compromising the many goal of the emergency workfare.

In Afghanistan, due to the absence of an efficient financial system, payments in the Labour Intensive Works Programme (LIWP) were terribly delayed, causing implementing agencies to stop working for a time, and laborers received their payments sometime only after three months after projects were completed (Johnson, 2004).

Non-wage funds

Non wage funds are crucial for the success of the project, but not always they are made available. In some low income countries of Africa the wage cost is borne by donors who expect the non-wage cost to be borne by the recipient country. Such a counterpart contribution is insisted for understandable reasons to elicit ownership by countries. However, in countries such as Ethiopia, in all public works prior to the Productive Safety Nets Program (PSNP) launched in 2004, the non-wage cost could not be borne by the recipient country with the result the program could not be implemented, and the available wage funds were disbursed to poor households without really implementing any program (Smith and Subbarao, 2003). The PSNP addressed this deficiency.

In other cases the efforts are made to insure availability of adequate funding even at times of increase of basic inputs. This was the case of Yemen in 2005, when the prices of input

²² To illustrate, the public works component had a tripartite arrangement where the Ministry of Local Government and Housing certified the works after inspection, the National Road Fund Agency (NRFA) was responsible for channeling of funds while the Project Implementation Unit (PIU) in the Office of the Vice President was responsible for disbursement and overall management. The signing of certificates was often delayed because works had to be inspected before payment could be made. Moreover, the PIU could not disburse before NRFA properly accounted for previous disbursement. This arrangement resulted in delayed reporting, delayed disbursement and delayed payment of wages. Some wages remained unpaid for months to an extent which cannot be explained by cash flow problems on the special account. (World Bank, 2006).

materials like steel, cement, fuel, and wages increased significantly by 60% to 100%. As a result the number of subprojects that could be financed under the project was reduced substantially. Later on the World Bank provided additional financing to the project to cover the increase in the cost of inputs to achieve the original targets (World Bank 2007 PID).

Weak capacity and the role of contractors

Implementation of a workfare program requires convergence of technical, managerial and labor inputs at the work site. Since the government capacity to accomplish such a convergence of inputs is weak, often contractors are hired to implement the program. This has led to two problems: (i) sometimes agencies providing the funding neither enforce the design of the program nor do they have any interest in enforcing them since they are accountable, not to the client, but to their respective state governments. (ii) Contractors may bring their own labor and not employ laborers from areas close to the project site for whose benefit the program was initiated in the first place. This was evident in HIMO projects in Rwanda where contractors brought their own laborers and paid them below the stipulated minimum wage.

In India too, the implementation through private contractors led to severe problems. The dovetailing of responsibility for implementing the program to locally elected bodies (the Panchayat Raj institutions in India) did not help mitigate hurdles in implementation because of weak accountability in the system as a whole. In the examination of the functioning of the Food-for-Work program in the Indian State of Andhra Pradesh, Deshingkar *et al.* (2005)²³ show that the involvement of contractors in the execution of the projects (which were meant to have no role in the execution) excluded the very poor and the lower caste and generated the incentive to use (clandestinely) labor-displacing machinery. In fact, the study sites they encountered the use of Poclains (a kind of excavator). Arguably the use of these technologies was an effort to maximize the efficiency and therefore the resources flowing into the local works projects as well as the result of the pressure by line department staff to complete the works in a short time, but the net result has been lower benefits to workers.

Political economy of local government involvement

In countries where the implementation of public works has been delegated to local elected governments it is important to strengthen accountability and to build their capacity for monitoring and supervision. In India, for example, the process of decentralization meant that the

²³ Drawing upon a fieldwork conducted in 2001-2002 in six villages in the Indian State of Andhra Pradesh.

implementation responsibility for workfare now rests with the locally elected bodies known as *Panchayat Raj* institutions (PRIs). Unfortunately most PRIs lacked the capacity to implement programs. As a result line department officials continue to have a strong influence in program implementation, which often generate opportunities for leakages. Political influence as well as bureaucratic meddling often led to selection of projects which have no benefit to the local community.

A recent study (Dev et. al. 2007) examining some aspects of the functioning of social safety nets programs (including PWPs) in three states of India, viz. Orissa, Madhya Pradesh and Karnataka, revealed significant differences in the functioning of PRI across the three states. Respondents in the state of Karnataka approached the PRI institutions for gaining access to safety net programs generally, whereas in other states there is much less resort to PRI institutions by poor households due to lack of confidence in these institutions. It is possible PRI institutions may have taken a keener interest in the implementation of the new program of employment guarantee introduced in 2006, given strong commitment both by the center and the states.

The above survey suggests that a number of issues need to be addressed before floating a workfare program. It is important to strengthen accountability at all stages in the implementation process. This can be achieved with program and process monitoring and social audits (see section VI below). The delays in the release of funds must also be avoided to maintain trust and schedule.

3.4. Asset creation and maintenance

Maintaining the assets created and sustaining the workfare intervention are important issues generally not addressed in most public workfare projects. Sustainability problems were evident in 15 of the 60 infrastructure projects reviewed. Most assets (primarily some heavily used roads) were not being adequately maintained. This neglect can be attributed in large part to the lack of a sense of local ownership of the projects, since community involvement in project planning and design was not actively sought (e.g., Morocco workfare project). Even where, after the completion of the asset, the local communities are involved in their maintenance through the local communities' presidents, the unavailability of resources prevents them from maintaining the projects.

In fact in most projects no practical arrangements were put in place to ensure maintenance nor were beneficiaries assigned the responsibility for that task. In the Zambia public

works project, maintenance and sustainability of the public works program was unlikely, because the project did not establish a framework for periodic maintenance of secondary and tertiary roads by the community or local authorities. The roads and bridges constructed have not yet been mapped and gazetted and there are no arrangements in place to ensure that this will happen. These facilities need to be comprehensively mapped, inspected and gazetted in order for the Government to maintain and rehabilitate them in the future. Alternatively, no efforts were made by the Government to assist the communities in setting-up local maintenance committees who could draw money from a Road Maintenance Fund to ensure sustainability. Interestingly, communities were given some training in maintenance of the assets, but communities are unlikely to engage in systematic maintenance without adequate financial provision and some guidance. In Afghanistan, most public works projects were roads. Significant benefits ensued following the construction of roads including especially cutting travel time and costs. Unfortunately, however, the constructed roads were already beginning to deteriorate because of lack of maintenance.

In Egypt, public works program under the Social Fund for Development (SFD) began to address maintenance problems in 1999, by requesting that 'sponsoring agencies' (Governorates) deposit up-front 10 percent of total project costs for maintenance purposes in a separate bank account, matched by an additional 10 percent from the SFD. This was based on best practice experiences from other Social Investment Funds in other parts of the world. However, these funds were rarely accessed due to the inability of Governorates to prepare adequate maintenance plans. This suggests that when even adequate financial planning and provision is made, there is no guarantee that maintenance work will be undertaken. In 2004, tripartite arrangements (between the governorates, NGOs and stakeholders) were reached in two governorates to define the roles and responsibilities of all stakeholders and began hiring local contractors to carry out periodic maintenance of roads, sanitation and potable water projects and canals. Lessons learned from this pilot will be taken into account as SFD has plans to scale up this maintenance scheme in the country's 26 Governorates.

There are exceptions. In Yemen, for example, building of schools was an important activity undertaken by public workfare. Schools allocated certain portion of school fees to meet operational or maintenance costs. In Tanzania public works program, communities have developed strategies to make sure that the created assets are maintained. Communities have formed various community groups depending on the type of created asset. For example, there are water committees, school communities and health boards. The government also allocated funds

to cater for repair of assets and the funds were channeled through the local government authorities. The local government authorities also provided expert advice to communities.

Thus, the experience of countries differs a great deal with respect to maintenance of assets. In general, where advance preparation has been made and provisions were incorporated in the design of the project intervention including financial provision and community committees were formed with specially assigned roles and responsibilities, the created assets were maintained. Where there was no such advance preparation and provision, assets could not be maintained.

In sum, three aspects need to be kept in mind in the choice of assets: (a) whether or not the assets created are productive, (b) whether or not the created assets are maintained, and (c) whether or not the benefits from created assets actually go to the poor.

3.5. Cross-country patterns

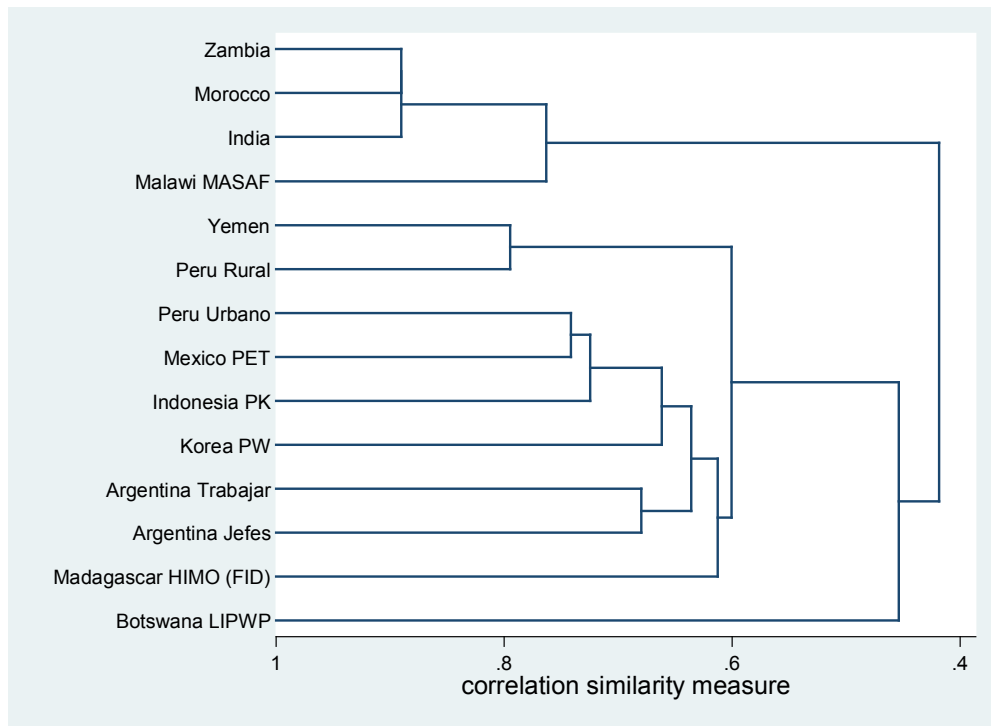
What is the association between income level of the countries, objectives of the programs and other characteristics of the programs? If we manage to know which set of factors are associated with workfare programs in different country contexts we could then explain the prevalence or the absence of public works programs, depending on the country circumstances. Thus enabling one to form a judgment to whether or not a public works intervention is a good option under given country circumstances

We used cluster analysis to discern the patterns of association between programs' objective and features and country level of income²⁴. The data used included two subsets of the database available containing information from 32, public works programs implemented during the past 20 years in 27 countries and described in the appendix 2 and 3. First we conduct the analysis using the observations on the countries and programs that have more variables and description of features. Then we conduct the same analysis using more countries and programs, albeit fewer variables and information on the features of the programs.

²⁴ A possible drawback of this cluster method is the so-called chaining phenomenon because clusters may be forced together due to single elements being close to each other, even though many of the elements in each cluster may be very distant to each other. To prevent such drawback, the cluster analysis here accounts for the intra-clusters correlation among the elements instead of the standard Euclidean distance.

The results show some interesting association between type of objectives, level of income and level of labor intensity, mostly along similar income level. The analysis for 14 programs, out of the 32 in the total sample, for which we have info on income level, project identification, wage level, objective, funding agency, labor intensity and targeting, identifies 2 big clusters of countries (Figure 16)²⁵ The first cluster includes mostly low income countries (India²⁶ Morocco, Zambia, and Malawi), which have programs with high level of labor intensity with antipoverty objectives and guaranteed income in case of unemployment. The second cluster includes low and middle income countries (Yemen, Peru (urban and rural), Mexico, Indonesia, Korea, Madagascar and Argentina jefes) that use public works mostly for responding to covariate shocks and employ medium level labor intensity. Note also that within the second cluster, Yemen and Peru Rural form a small subgroup not directly associated with other countries. The main reason being that both programs are implemented at community level.

Figure 16: Cluster analysis of Public Works programs (14 programs)



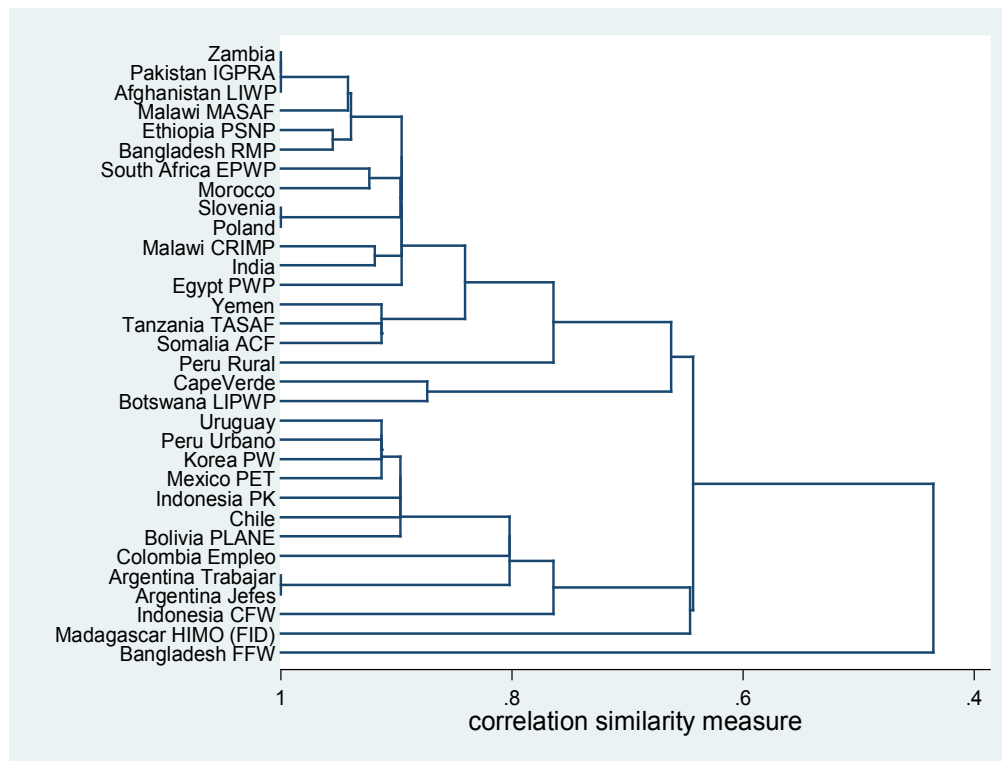
²⁵ The clusters are presented as Dendrograms that is a tree diagram frequently used to illustrate the arrangement of the clusters produced by a clustering algorithm.

²⁶ Note that in the case of India we combined the JRY, NREGA and MEGS programs under one program because they were clustered very close to each other in the results of the estimates when they were treated individually.

When using the larger sample with 32 public works programs the structure of the main clusters, reported in Figure 17, remain essentially unchanged. This time, though, the additional variables (program features) considered allow to form additional smaller clusters within the two main clusters that have been identified before. The two main clusters go from Zambia to Egypt and from Yemen to Indonesia. Again, countries that feature programs with antipoverty objectives, combining self targeting with other methods are clustered together. The exceptions here are Slovenia and Poland that are upper middle income countries that had implemented programs to help population to be reintegrated in the labor market. But as with many anti poverty programs they had the government as the implementing agency.

Secondly, middle income countries from Uruguay to Indonesia, such as Argentina, Uruguay, Mexico and Colombia are more likely to implement public works to respond to covariate shocks. Madagascar and Bangladesh FFW do have special features that place them alone in the diagram. It may be worth noticing that all programs where communities have a key role in identifying the projects to be undertaken are in the first big cluster (Ethiopia, Malawi MASAF, Somalia ACF, Yemen, Egypt, and Peru Rural).

Figure 17: Cluster analysis of Public works programs (32 programs)



The patterns that emerge from the cluster analysis are very clear and provide some useful indications for countries interested in using public works programs. Important lessons can be derived from the experiences of countries with similar level of income and need in the design of public works programs from setting the right objectives to the design features.

IV. Monitoring and evaluation of Public Works programs – Lessons from experiences

Strong monitoring systems are necessary to support credible program evaluations and to provide feedback for improvements in productivity, effectiveness, and impact. Evaluation of public works are necessary to: a) provide feedback during the life of the program to help improve their effectiveness; b) making projects accountable to the public; and c) help inform government decisions about spending allocations. Despite their value, effective M&E systems for public works programs have been rare. This section illustrates the need to design of a good M&E framework with one good practice example from Ethiopia, followed by a discussion of monitoring indicators relevant for public works program and concludes with an overview of findings from available evaluations of public works programs.

4.1 Design of an M&E: An example from Ethiopia

The PSNP in Ethiopia provides an illustration on how to set up a good M&E framework in a low income country, clearly delineating objectives and indicators of output and outcomes related to the public works component, and its indicators. A more general outline of possible indicators to be used for public works program is reported in the Appendix 1. As can be seen in Table 5 the list of outcomes reflects the overall objectives of the program and might need to rely on other components of the project and other programs beyond the public works itself.

Table 5: Outcome and Output Indicators for the PSNP Public Works component in Ethiopia

Objective	Indicators
Outcomes	
Chronically food-insecure households have ensured food consumption during the program period	<ul style="list-style-type: none">• Percentage of program beneficiaries who report 12 months of food access from all sources including the program• Average number of months of household food shortages covered by the program
Household assets protected (households' short-term vulnerability to shocks reduced)	<ul style="list-style-type: none">• Percentage of the average change in asset levels of chronically food-insecure households• Percentage of households reporting distress sales of assets• Percentage of households reporting consumption of seed stocks
Community assets used productively and managed in a sustainable manner	<ul style="list-style-type: none">• Percentage of households reporting satisfaction or direct benefits from the community assets developed• Percentage of households regularly using three or more community assets developed by the program• Percentage of public works for which an ongoing management mechanism has been established

Outputs	
Public works Beneficiaries	
Appropriate payments (food and/or cash) delivered to targeted beneficiaries in a timely and predictable manner	<ul style="list-style-type: none"> • Percentage of participants receiving food and/or cash resources per month versus the planned number supposed to receive food and/or cash • Percentage of food and/or cash delivered per month versus the amount that was planned to have been delivered • Percentage of districts completing 70% of distributions by end July
Targeting undertaken according to established procedures	<ul style="list-style-type: none"> • Percentage of community members who understand targeting criteria
Community assets	
Appropriate and good quality public works constructed	<ul style="list-style-type: none"> • Number of public works constructed, including kilometers of roads constructed or maintained per targeted district • Number of structures constructed per targeted district (health posts, classrooms, grain stores, market structures, latrines) • Percentage of public works that conform to established standards
Management systems for community assets established	<ul style="list-style-type: none"> • Percentage of communities with guidelines or bylaws developed for the management and protection of community assets • Number of visits to sites by a technical task force team per district per year • Percentage of local, district, and regional monitoring reports on actual versus planned activities delivered on time • Percentage of districts where the M&E plan is fully understood and implemented

Source: Adapted from Grosh et al, 2008 and Food Security Coordination Bureau (2004) –

Administrative capability and training and type of infrastructure available will determine the success of the M&E plan and ultimately of the program. In Ethiopia, for example, Government staff at the local level collects monitoring data using standardized forms. The information is then compiled and summarized at the district, regional, and federal levels where are converted into electronic form. The system aimed for simplicity to account for the low capacity of the program's frontline units. However, implementation of the monitoring plan encountered numerous logistical obstacles due to lack of local staff, the poor qualifications and high turnover of existing staff, and the poor infrastructure in some districts (for example, about 20 percent lacked electricity).

To generate a minimum amount of monitoring data, a number of solutions were devised. These included: a) collection of basic completion and disbursement data via telephone from

around 80 districts on a twice-weekly basis; b) the formation of a small team at federal level in charge or conducting spot checks; c) a system of roving audits to investigate compliance with financial rules, disbursements and payments, and appeals and complaints; and d) a system for on-site reviewing a sample of 80 public works projects twice a year to investigate both the quality of planning and implementation. In the meantime, the program further simplified its monitoring system and invested more in training.

4.2. Key elements for Monitoring Public works Programs

To monitor public works program's effectiveness, it is important to clearly define the indicators and tracking them over time towards the targets. From an operations point of view, the MIS provides the cornerstone for an effective monitoring system. However it is important to stress that the main purpose of MIS is not monitoring, but to provide information that help programs to carry out the many transactions needed to run them. Its fundamental purpose, thus, is to ensure that each function is carried out correctly for each client.

Key indicators include input and output indicators, described in more details in Appendix 2, and outcome indicators. Box 2 provides an illustration of core definitions of outputs used in South Africa public works project.

Box 2. Summary of Core Definitions for Monitoring Purposes in the South Africa Expanded Public Works Program

Person-days of Employment Created

The number of people who worked on a project x the number of days each person worked.

Job Opportunities

1 job opportunity = paid work created for an individual on an EPWP project for any period of time. In the case of social sector projects, learnerships will also constitute job opportunities. The same individual can be employed on different projects and each period of employment will be counted as a job opportunity.

Project Wage

Minimum Daily Wage Rate = daily wage (whether task-rated or time-rated) per individual project. This wage rate must be inserted in the Project tender document as per the EPWP Guidelines.

Training Person-Days

A formal EPWP training course has been arranged by the Dept. of Labour. The number of training person-days attending this course or modules of this course must be captured.

For Other Training 1 training day = at least 7 hours of formal training. The number of Training Person-days is the number of people who attended training x the number of days of training.

A distinction must be made between accredited and non-accredited training person-days.

Project Budget

The project budget = the price tendered by the contractor + the professional fees for the professional service provider appointed to design and supervise the project.

The project budget excludes government management & administration costs.

Actual Expenditure

Actual expenditure = the expenditure on the project by the contractor + the expenditure by the professional service provider appointed to design and supervise the project.

The actual expenditure excludes expenditure on government management & administration.

Demographic Characteristics of Workers

The number of workers that fall within the following categories must be recorded:

- Youth (i.e. 18 – 35 years of age)
- Women
- People with disabilities

Source: adapted from Government of South Africa: Department of Public Works. 2005. Framework for Monitoring and Evaluation of the Expanded Public Works Programme

Outcome indicators

Outcome indicators should provide information necessary to evaluate if the program has met its objectives. Examples include the income of workers, their working prospects and the economic impact of projects on the community. Process and efficiency indicators provide info on the intermediate impact of the projects, such as location of projects, the quality of the work done and the use by community, characteristics of workers, their transaction cost and the beneficiaries experience with the payment.

Unfortunately outcome indicators are not collected very often for public works program, especially in poor countries. In MSFAF project in Malawi the monitoring and evaluation (M&E) system were not able to track outcome indicators, because of the poor linkages between the M&E system with poverty monitoring activities by the Ministry of Planning and Economic Development. Consequently, outcome indicators that were included in the design of the project were not collected, making it relatively difficult to measure the impact of the Project on the beneficiaries/beneficiary communities. (World Bank, 2004 -MASAF ICR)

When process indicators are collected they can capture the program's overall cost-effectiveness, or the efficiency of a subset of program operations. The example in Table 8, from a study in Madagascar (Van Imschoot, 2006), shows the implication for using public works with high labor intensive (HLI) techniques compared to other standard methods to build infrastructures, like semi-mechanized and high mechanized intensive (HLI) techniques. The table shows that the cost of building infrastructures using HLI is much lower than using more mechanized method of construction.

Table 6: Comparison of costs by execution methods and types of infrastructure in Madagascar

Infrastructure Categories	Roads			Buildings			Irrigated Zones		Urban Roads
Execution Method	HLI	Semi - mechanized	HMI	HLI	Semi - mechanized	HMI	HLI	HMI	HLI
Total Labor	42.7%	30.2%	18.6%	34.9%	31.7%	12.0%	46.0%	16.1%	67.1%
<i>Direct labor portion</i>	<i>(26.5%)</i>	<i>(24.7%)</i>	<i>(7.9%)</i>	<i>(11.3%)</i>	<i>(13.4%)</i>	<i>(7.3%)</i>	<i>(13.7%)</i>	<i>(6.2%)</i>	<i>(33.0%)</i>
Foreign financed	49.9%	60.8%	71%	56.3%	59.1%	76.3%	46.7%	73.1%	28.4%
Local materials	15.6%	9.8%	8.1%	33.6%	19.3%	3.4%	37.7%	2.6%	40.6%
Unit costs (\$)	9,913 (km)	14,695 (km)	55,085 (km)	126 (m ²)	186 (m ²)	216 (m ²)	306 (ha)	942 (ha)	24 (m ²)

Source: "Comparative study of the different approaches used for various types of basic infrastructure work in Madagascar," Marc Van Imschoot, September 2006.

4.3. Evaluations set up and results

More and more public works programs are currently being evaluated thoroughly, filling an existing gap. Programs in India, Argentina, Peru, South Africa, and Yemen, among others have been evaluated in depth. The reasons for the lack of evaluations vary from the temporary nature of the programs, to the difficulty of defining the objective of the evaluation and the difficulty of collecting data. Three types of evaluations can be distinguished: process evaluation, assessment of targeting efficiency, and impact evaluation.

Process evaluation

The objective of process evaluation is to find out if the program is implemented as designed. An illustrative list of questions that can be addressed by the process evaluation is listed in Figure 18.

Figure 18: Example of questions for process evaluation

-
- At management level
 - Who is implementing the projects?
 - Oversight – Local gov, Engineers...
 - Use of contractors
 - Is the program well organized
 - Are resources allocated according to plan
 - Are they tracked properly and delivered efficiently
 - At project level
 - Are projects completed on time and up to specification?
 - What is the actual number of people being hired?
 - Less? More than expected?
 - What is the wage respect to the local wage and rules?
 - If not self-targeting, what are the other selection processes employed?
 - Beneficiaries participation
 - How did they hear about the program?
 - Are they beneficiaries coming from local communities?
 - Are people being paid on time?
 - Are the working conditions appropriate?
 - Are there any accommodations for female participants?
-

Source: Adapted from Grosh et al. 2008

The information needed for process evaluation can be collected from several sources including: a) administrative records; b) interviews with implementation staff, program officials; c) focus groups interviews; and d) beneficiary surveys.

Somalia's CFW project provides a good example of the use of beneficiary surveys. The project organized post-distribution monitoring (PDM) of the distributed cash or vouchers two weeks after payment. Structured household surveys were conducted with approximately 10 per cent of beneficiaries to assess the level of satisfaction among beneficiaries and to evaluate whether the project had met its objectives (Mattinen and Ogden, 2006). Semi-structured focus group discussions and interviews with key informants were also planned, but remained extremely limited and sporadic.

The examples of existing assessments of implementation processes that are available do not cover the questions we have listed above. However, a few recent reports give some idea of the parameters under considerations. In Egypt, the 2004 MDRM II (World Bank 2006a; Government of Egypt, Social Fund for Development, 2004) provides an assessment of the

efficiency of the project and the cost of the job created. The document describes the efficiency of PWP to be quite good, given the country context and in comparison to other infrastructure service providers operating in the country. The conclusions are obtained by tracking the average expenditures per job created (which includes the expenditure per beneficiary and related inputs and management costs) and the average expenditure per beneficiary. During the third phase of the project (1999 – mid 2006), the expenditure per job created was equal to L.E.211 (US\$37) per man/month for PWP and it has been decreasing since the first phase of the project. The average expenditure per beneficiary during the third phase was L.E.49 (US\$8.6) for the public works component. It decreased sharply in the second phase (1997-2000) compared to the first phase (1993-1997), and rose again during the third phase, although when taking into account inflation the expenditures have remained fairly stable over the past two phases.

In Madagascar, a recent study (Andrianjaka, and Milazzo, 2008) collected information on the number of workers employed, days worked, and wage rates across several projects implemented by different agencies. This analysis helped to make a comparison across projects with different objectives in terms of labor intensity. The results show that labor intensity for projects designed to address labor needs following natural disasters was around 80 percent, while those project aimed at building small infrastructures and implemented by ILO had a labor intensity of less than 40 percent. The information on local market wage rates pointed out that paid wages were higher than local wages, with the result that more people participated to the projected using a rotation system.

This example illustrates the trade-off existing in a situation where in a given location there are too many persons demanding a temporary job in public works, but the available resources are limited and not sufficient to include all of them in the program, two options emerge. The first is to adjust the wage rate at a higher level and include a larger number of workers on a rotation bases for a few days each. The second is to adjust the wage level at a lower level and include a smaller number of workers, willing to work at a lower wage, for more days each.

Evaluations that throw light on Targeting/Incidence

The key question that targeting/incidence evaluation is trying to answer is if the program is reaching the people that wanted to reach. This question can be addressed in two important ways. The first deals with the location of the projects. Public works projects are location specific, therefore well targeted public works should be located in the areas where there are more poor people and where they are more likely to be in need of short term employment. The second

deals with the actual participation of poor people to public works projects. In this case the evaluation concentrates on welfare indicators (typically, per capita income or consumption)²⁷ required to rank participants according to their standard of living and thus assess the effectiveness of the targeting provided by the wage rate or additional screening mechanisms.

There are not many studies that assessed the location of public works projects. Public works projects are not always located in poor areas. Sometimes, this happens because poor areas are less accessible and more difficult to work in. In South Africa, for example, Adato and Haddad (2001) find that some districts with high levels of poverty and unemployment had no public works projects, while others with low levels of poverty had benefited from several. When location of projects follows a poverty map, like in Peru's Trabajar Rural, instead, the allocation of 90 percent of the projects takes place in the districts in the bottom forty percent of poverty distribution (FOCONDES, 2003). However, non poor areas too may house some non poor households. Thus it is not entirely justified to exclude non poor areas from the purview of public works.

The assessment of the incidence of participation of the poor is often focused on the comparison of poverty status of actual participants versus non participants. This is usually done using current household surveys sometimes in combination with ad hoc surveys that contain enough information on the level of income (consumption) of the households of the beneficiaries. Specific surveys are particularly necessary to capture program beneficiaries when programs do not reach a large number of beneficiaries. When beneficiary survey of the participants are collected, the challenge is to define a benchmark for the defining the level of income (consumption) of the beneficiaries. This can be done by comparing the characteristics of the beneficiaries in the new surveys with existing survey when they are available. Of course one has to use the same type of for the variables that are used for benchmark. If a survey is not available, then a new survey has to be designed to capture the characteristics of the reference population.

The few available evaluations made show that when properly designed public works have been able to reach poorer households. In Argentina, 80 percent of the beneficiaries to the Trabajar program in 1997 came from the poorest 20 percent of households in Argentina (Jalan

²⁷To be comprehensive, a consumption indicator should capture all its components, such as food, nonfood, and services, as well as the value of goods produced and consumed by the household and the imputed value of durables or the rental value of an owner-occupied dwelling. Similarly, a comprehensive income indicator will cover the incomes earned by all household members from formal and informal sources and the value of goods produced and consumed by the household (Grosh et al, 2008). For guidance on constructing a consumption-based welfare measure, see Deaton and Zaidi (2002). For guidance on constructing an income-based welfare measure, see Eurostat (2003).

and Ravallion 1999, Coady, Grosh Hoddinott, 2004). Similarly the incidence analysis of the Jefes (Heads of Household) Program shows that the share of Program participants among the 40 percent better-off households in Argentina was only 6 percent in 2005 while the share of Program benefits going to the bottom two quintiles was 80 percent. (Lindert *et al.*, 2006). In Ethiopia, those that participated in public works had higher income and level of assets than those that received direct support, but less than those that did not participate any of the two programs (Table 9) (World Bank 2007- Ethiopia PSNP, ICR, Targeting.) Research by Lanjouw and Ravallion (1998) shows that the poorest quintile is well served by public works programs in India. Recent research carried out in three states of India has confirmed the strong pro-poor bias of public workfare program in comparison with other safety net programs (Dev, Subbarao, Galab and Ravi, 2007)

Table 7: Household characteristics of PSNP beneficiaries and non Beneficiaries in Ethiopia

Economic Characteristics	Direct support	Public Works	Non-PSNP HH
Annual HH income (birr)	690	1,587	1,949
Total Asset value (birr)	320	846	1,471
HH owing land (%)	75.4	88.8	88.2
Land cultivated (ha)	.47	.64	.98

Source: Devereux, Stephen, Rachel Sabates-Wheeler, Mulugeta Tefera, and Hailemichael Taye. 2006.

The targeting performance of the Trabajar program in Peru shows a difference in targeting outcome between the urban and rural programs. The estimates obtained using national quintiles show that the rural program is better because the rural population is overrepresented among the poor (FONCODES. 2003; World Bank. 2005. “PERU). Nonetheless, both programs do a good targeting job given that most of the participants (80 percent in rural areas and 75 percent in urban areas) are in the bottom 40 percentile of the population. In contrast the JPS Padat Karya program in Indonesia had a very high wage and reached those affected by the financial crisis and not necessarily those more poor (Pritchett, Sumarto, and Suryahadi 2002; Sumarto, Suryahadi, and Pritchett 2000). However, the program in Indonesia was not necessarily poorly targeted because it reached the segment of the intended population. At a time of crises, those poor people that had a source of income did not participated, but the program was able to prevent further loss of consumption and assets for those that lost income because of the crises.

Impact evaluations

The evaluation of public works programs should help to determine the impact of a program on the intended target groups. First of all, evaluations should assess if programs are able to raise the income of poor beneficiaries to help them to smooth their consumption and eventually reduce the level of poverty in the country. Secondary objectives such as providing skills development to unemployed or women should also be assessed in case they are explicit objectives of the programs. Lastly, evaluations should also assess if the infrastructures and services provided by the programs have an impact on the life of the communities.

The techniques for evaluation include randomization or experimental design; quasi-experiments such as matching, or double differences; and non-experimental or instrumental variable methods. A full discussion of these various techniques is beyond the scope of this paper. An overview of these techniques with illustrations to public works programs is available in Grosh et. al. (2009). Here we illustrate below findings of recent impact evaluations of public works programs.

Direct impact on beneficiaries

Several studies found that public works programs had a positive impact on the beneficiaries, at least in the short term. In Colombia Empleo in Accion, participants showed an increase in the numbers of hours of over 35 percent (from 23.7 hours per week to 33.3) and an increase of 9 percent in the total consumption of the households. However the increase in the consumption of food items like milk or meat was much higher (42 and 28 percent respectively) (Departamento Nacional de Planeacion, Colombia, 2004), though such increases is a regular pattern observed in all transfer programs, and so not unique to public works.

In addition, qualitative evaluation shows that the PSNP in Ethiopia has had a positive effect on the well-being of beneficiaries. Analysis shows that 60 percent were less likely to sell assets to buy food in 2005 and 30 percent enrolled more of their children in school. Moreover, almost half the beneficiaries surveyed stated that they used healthcare facilities more in 2005/06 than in 2004/05. Interestingly most of the beneficiaries attributed those changes to their participation in the program (Devereux et al., 2006).

An important challenge is to define clearly the outcome of interest and how to measure it taking into account the influence of other factors. If the main outcome to be measured is the

increase in the income of the households of the beneficiaries as a result of the wage rate (in cash and/or food) received, the analysis needs to take into account the transaction cost (transport etc.) as well as lost opportunities to work. The marginal increase of income tends to be less than the level of transfer, which implies that in the absence of this program, the beneficiaries could have received some income from participating in informal jobs. When this forgone income is deducted from the public works wage, the marginal income transfer will be lower than the wage income received from the program. However, it is worth stressing that while the net wage income gain for the participant may be lower than the wage, *the gains to the society* may not be lower, since, in a situation of high unemployment, some other person in the country would fill in the job vacated by the participant to the public works program.

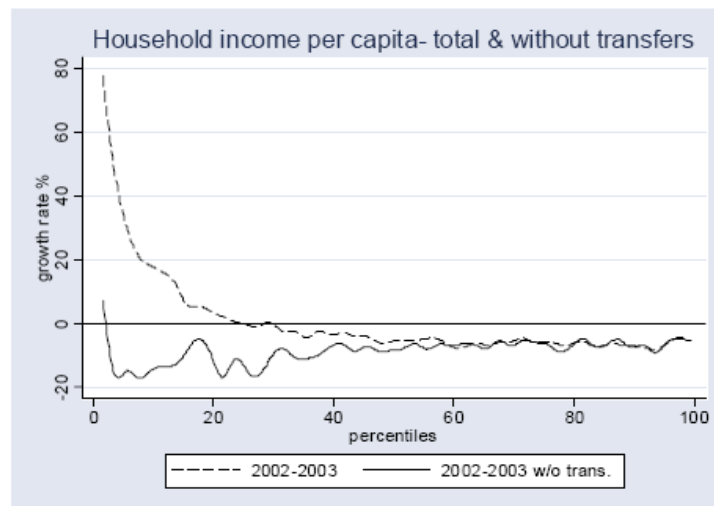
In the case of Peru, Chacaltana (2003) found that the net gain derived from the program was equal to 24 percent of the nominal transfer. Beneficiaries received a monthly salary of 300 soles, while their control group was able to generate 227 soles on their own, in absence of the program. In the Jefes program in Argentina in 2002, the net income benefit (after taking into account foregone income of the participant), was estimated as two-thirds of the AR\$150.00 benefit. This net income benefit decreased to one-third of the transfer by May 2003 (Galasso and Ravallion, 2004, and Galasso, 2004). In the Empleo in Action in Columbia, the increase in the monthly employment income of the participants in the program was on average close to 39 percent on income that would be earned without a program, but was much higher for women and youths between 18 and 25 years old (90 percent for women and 54 percent for young people (Departamento Nacional de Planeacion, Colombia, 2004).

Another challenge is to calculate the longer term impact of the program on poor people, such as being able to smooth consumption over the difficult periods, rebuild critical assets, finding permanent source of income, and ultimately getting out of poverty. Achieving those outcomes not only depends on the individuals participating to the program, but also on the other members of the households and might take longer time to achieve. Thus, this type of evaluation requires additional data, such as longitudinal household survey that follow beneficiaries over time, and adequate techniques. Very few evaluations have addressed this issue.

In Argentina in the 2002-2003 period, the Heads of Household Program precluded 10 percent of the beneficiaries from falling into extreme poverty (see Galasso and Ravallion, 2004, and Galasso, 2004) and was instrumental in tilting the overall distribution of income changes at

the beginning of the recovery phase in a pro-poor way. The growth incidence curves²⁸ (GIC), reported in Figure 19, show that while all non participants had negative income growth over the 2002-3 period, beneficiaries in the low income percentiles showed positive income growth over the same period.

Figure 19: Growth Incidence Curves, 2002-2003 (Argentina)



Source: The World Bank (2005b). Argentina: Seeking Sustained Economic Growth with Social Equity, Report No. 32553.

The long terms impact of programs also include the acquisition of useful skills and job prospects and impact on gender. The RMP program in Bangladesh for examples attempts to build basic skills and to introduce the women beneficiaries into successful micro-enterprises. Although not all women are successful, 63 percent of them remain member of the NGO three years after leaving the program (CGAP, 2006). In general the record of public works with respect to the promotion of gender equity is mixed. For example, India's Maharastra Employment Guarantee Scheme was designed to encourage the participation of women. Employment was provided within 5 km from their places of residence, creche facilities were provided, and male-female wage discrimination was eliminated. As a result, close to half of all participants were women (Subbarao, 2003). In South Africa instead, although women were among the main target groups, only 23 percent of the employment generated by the programs actually went to women (Adato et al, 2001). It is worth stressing in this context that there could be a trade-off between skills development and poverty targeting, or the extent of job creation with a public works

²⁸ Growth Income curves (GIC) allow us to compare the incidence of growth in poorer segments of the population with that of richer segments or with the rate of growth of mean income (or expenditure)

program. To this extent, public works programs with a strong objective of creating jobs may not pay much attention to skills development.

Secondary and indirect impact

The secondary and indirect impact of the programs on communities is a crucial outcome because the cost of transferring one dollar of income to a poor household under a public works program is much larger than a simple transfer (Ravallion, 1999). The types of impacts usually considered include the positive effect generated by the assets created (school, road, etc.) and the possibly negative impact on labor market – salaries can be pushed downwards, or labor shortage might occur for example. The analysis can be done using techniques ranging from an assessment of the quality of the assets and services created against accepted benchmarks to overall impact assessment. The limited experience from India's newly introduced National Rural Employment Guarantee Scheme is that the program is contributing to capital formation in agriculture. During the very first year 2006/07, 75% of 830,000 works undertaken with an expenditure of over Rs.90 billion have been devoted to water harvesting structures, minor irrigation tanks, community wells, land development, flood control, plantation, etc., activities likely to contribute significantly to raising farm productivity.

Another important secondary benefit from large, nation-wide PWPs may be an upward pressure on agricultural market wages via an enhancement of the bargaining power of workers who now have a PW program that virtually is serving as an unemployment insurance program. Gaiha (2000) noted that the Maharashtra Employment Guarantee Program did contribute to enhancing the bargaining power of workers and exerted an upward pressure on market agricultural wages. Public Works can thus serve to curb the oligopsonistic power of medium and large landlords.

Quantitative studies show that well-designed workfare programs do have the potential to confer significant social gains from the assets created. There is some evidence that in Zambia 37 percent people in the areas covered by the public works projects improved their access to market (the project reduced distances by connecting previously disconnected road networks). Further, 15 percent said that the attendance of pupils at school had improved because of the project. Finally, 13 percent indicated that the project had improved access to health services due to higher ability to pay (Zambia ICR 34926). In Peru the benefits of community assets built represent a 54 percent additional return for labor (Chacaltana 2003). This figure is slightly lower than the indirect

multiplier of civilian works, estimated to be between 1 and 2, but this is the result of the mix of projects that include poorly valued activities, such as afforestation. The overall multiplier effects of additional employment in the local economy was found to positive in the long run particularly where incomes saved were invested in further productive activities

Measuring the aggregate impact of public works is a difficult task and it is not done very often. There are, however, a few examples that show the overall positive impact of public works programs that use higher percentage of labor intensity. In Madagascar, Ramilison and Randrianarison (2007) use a macroeconomic model to assess the comparative advantage of using high labor intensity (HLI) versus high mechanical intensity (HMI). They show in Table 10 that HLI programs have a much higher level of value added, household income, job creation than HMI. This is because, the indirect contribution of HIL towards value added, income and so on, is very large. Another alternative is to use computable general equilibrium (CGE) model to measure broader impacts on macroeconomic variables such as net jobs created, income redistribution and so on. For example Narayana, Kirit and T. N. Srinivasan (1991) have used a CGE approach to shown the aggregate impact of public works program to be highly beneficial to poor households.

Table 8: Comparative Analysis of the Investment Impact of Ar 164.4 billion on Infrastructure Work in Madagascar

(In Ar billions)

	HLI			HMI		
	Effect			Effect		
	Direct	Indirect	Total	Direct	Indirect	Total
Total Value Added	72.7	170.9	243.7	35.8	84.2	120.1
Consumption	60.2	191.0	251.2	29.7	94.1	123.8
Household Income	72.7	230.7	303.5	35.8	113.6	149.5
Public Deficit	-155.3	15.6	-139.7	-152.3	7.7	-144.6
Public Expenditure	-164.4	0.0	-164.4	-164.4	0.0	-164.4
Public Revenue	9.1	15.6	24.7	12.1	7.7	19.8
<i>Import Duties</i>	8.4	8.9	17.4	11.8	4.4	16.2
<i>Taxes on Goods and Services</i>	0.0	4.6	4.6	0.0	2.3	2.3
<i>Income Tax</i>	0.7	2.1	2.7	0.3	1.0	1.3
Balance of Trade	-91.7	-97.4	-189.0	-128.6	-48.0	-176.5
Job Creation	54,276	96,814	151,090	26,746	47,707	74,452
Coefficient			1.48			0.73

Source: Macroeconomic framework and potential of approaches based on employment and local resources, Eric Ramilison and Jean Gabriel Randrianarison, 2007.

Cost effectiveness

What is the cost effectiveness of public works programs in raising the income of the poor and reducing their poverty compared to other safety nets programs? There is no doubt that public works are expensive way to transfer income to poor households, but the analysis of cost of the program as to has to take into account both the direct and indirect impact of the program illustrated above. It has been shown that public works, for example, are less costly alternatives to building small infrastructures, compared to using private contractors using more capital intensive methods.

In practice the estimation of cost effectiveness of public works should take into account the costs and the benefits of the program. The information on the costs should include budget data disaggregated by activity (labor, administrative, managerial, input materials), and by project (roads, irrigation infrastructure). In addition it should also take into account the targeting efficiency to assess the proportion of the funds that actually reach the intended beneficiaries. The calculation of the benefits include: a) short term direct outcomes, measured by the increase in employment and income of participants, discounted by the cost of participation and opportunity cost²⁹; and b) the potential medium-to-long term impacts indirect impact, measured by value added to the community and second round employment benefits from assets created.

The information to conduct a comprehensive analysis of costs and benefits are not available. In the absence of such information, analysts have attempted to calculate cost effectiveness using plausible assumptions. Ravallion (1999) has suggested simple analytical tools to calculate a comprehensive measure to rapidly appraise the cost effectiveness of public works programs in raising the income of the poor. The analysis proposed focuses on the values of five key variables:

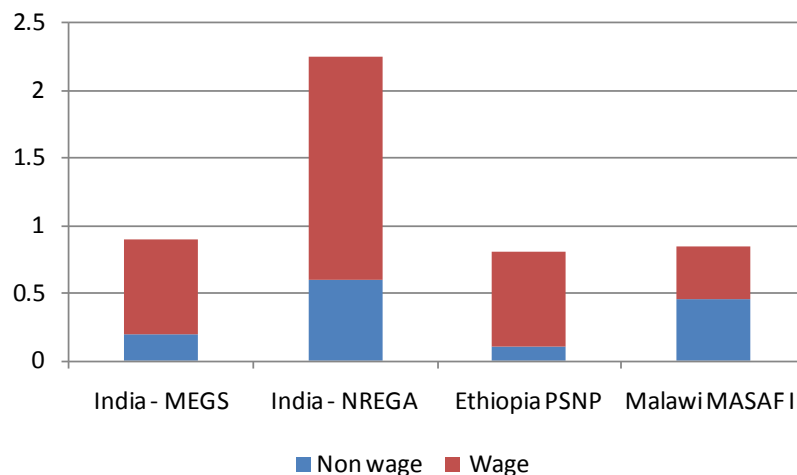
- Labor intensity (in other words, the proportion of the total wage bill over the total operating cost;
- Targeting performance; proportion of the wages paid out to poor workers
- Net wage gain (in other words, gross wages minus all costs of participation incurred by workers);
- Indirect benefits flowing from the assets created.
- Budget leverage or the share of the government's outlay that actually benefits the poor, when co-financing from non poor communities are required

²⁹ However the loss of income transfer due to the opportunity cost might be overestimated in the aggregate. It is possible in fact, that those few earning income opportunities bypassed by participants in the public works programs are being taken by other poor people.

The results of a simulation analysis in a low income setting show that the cost of transferring one dollar to poor people in low income with an average poverty rate of 50 percent is equal to \$2.5 if future gains from assets created are taken into account and \$3.6 if only current benefits are considered. These simulations do not fully take account of the *indirect and secondary beneficial effects* of PW programs noted above and, to this extent, probably over-state the costs of transferring wage income under public works programs. However, the rapid appraisal method illustrated provides useful indication of the main design constraints for cost effective public works program, but it is only a simulation exercise not based on actual data and cannot substitute for rigorous evaluation.

In our review of programs around the world we have collected some factual information on cost of the programs. Figure 20 below shows the total cost per beneficiary per day including two components: Wage rate and remaining cost (admin + Inputs). It is evident from the table that the cost of the program varies by country and across programs in the same country as well. However the cost estimated derived from this table should be interpreted with caution, and in any case they are undoubtedly over-estimates and do not take into account any the benefits of the program mentioned above.

Figure 20: Cost per day per beneficiary for wage labor and other costs for four programs



Source: Authors calculation using several sources.

V. Concluding observations and way ahead

This paper has reviewed the varied experience of several countries bearing on objectives, design features, targeting, financing and implementation arrangements, and delineated cross country patterns with respect to all the above features in order to determine the factors contributing to its use as a successful safety net program.

The analysis of patterns of program objectives shows that in most countries generally, and in middle income countries particularly, PWP has been mostly used in response to either a one-time large covariate shock (such as macro crises or a natural disaster), or in respect to repeat shocks such as periodic, often localized droughts or floods or surges in unemployment. In low income countries, PWPs also have an antipoverty or poverty reduction objective. Across regions, the sustainability of the program, and its implementing apparatus, varied a great deal depending mostly on the availability of funding. For example, the unpredictability of donor funding, and the stop-and-go nature of the program in many African countries has hampered efficiency and reduced its effectiveness in accomplishing its main objectives. In much of south Asia, on the other hand, the program is largely domestically funded, is sustained over time, thus creating significant within country capacity to expand or contract the program as needed, and virtually playing the role of unemployment insurance. Regardless of the nature of funding, sustainability or otherwise, and geographic location, there is ample evidence to suggest PWPs have played a significant role in mitigating the impact of negative income shocks, provided care is taken to create an implementation structure, draw up a shelf of projects, and communities are involved in their selection.

Our review does show that well designed and implemented PWPs can help mitigating income shocks and being used as effective anti-poverty instruments. For example, India's recent initiative in launching a 100-day guaranteed employment in rural areas attests to the considerable stake the Government of India reposes in this program to reduce rural poverty. Two other South Asian countries – Bangladesh and Nepal – are also considering an intervention along the same lines. However, this survey has shown that a number of steps need to be taken to ensure that public works are used in an efficient and cost effective manner and thus achieve the intended objectives. These are briefly summarized below.

How to ensure PW efficiency and effectiveness

The wide variation in the effectiveness of the program in accomplishing its goal raises the question: what makes for PWP to be a successful safety net intervention that can reduce poverty, especially seasonal poverty via consumption-smoothing, and also create useful public goods? This question is important, given the variation in use and efficiency of current programs in several countries.

Firstly, it is important to consider a PW program that: a) has clear objectives, following examples of patterns present in the regions with similar level of income; b) can result in the creation of valuable public goods; and c) has predictability of funding both for meeting the poverty alleviation objective and for responding to emergencies

Secondly, this review has shown that the success of the program depends a great deal on careful design and incorporation of *all* the key design features, such as: (a) setting the design parameters (such as the level of the wage rate and labor intensity) right, (b) establishing the implementation structure (paying attention to decentralization aspects as needed, depending upon country circumstances.

Thirdly, another important conclusion of this survey is that at every stage from decisions regarding the objective of the program to its design (especially wage setting), to coverage, scope and duration of the program and implementation modalities, countries have to confront a variety of choices and trade offs. Depending on the set of choices made by a country, the outcomes and impacts vary accordingly. These choices and trade offs have to be kept in mind while assessing the impacts and cost-effectiveness calculations of PW program.

Finally, a credible monitoring and evaluation system designed right upfront, prior to launching of the program can allow for mid course corrections and to respond to sudden changes which can inhibit effective implementation. Considering that the program involves financial disbursements to various actors -- line departments, other implementing agencies, contractors, workers, etc. -- it is important to institute an *oversight mechanism* such as the Social Audit planned for the new Indian program, to detect and prevent abuse including potential leakage of program funds.

The future of PW

The potential of the PWP program is enormous both in countries that have experiences with these programs and especially in countries that never used them. Our review has shown that many countries have not implemented the program even though their circumstances make them eminently suited for such a program. For example, this is the case of low income countries of Central Asia (such as Tajikistan) subjected to high seasonal unemployment and repeated shocks have not considered this program as a safety net.

More investigation is needed, though, to better understand the potential of PW programs in countries where they are not currently used and, in countries where they have been used extensively and over a long period of time, the second round effects of the impact of programs of the public goods generated on labor markets and poverty. For example, a program that has generated significant irrigation infrastructure or roads (as was the case in Maharashtra Employment Guarantee Scheme), is most likely to generate second round employment effects from the created infrastructure. Assessing such benefits is not easy and would require panel data. Furthermore, such an analysis of benefits from created infrastructure is also useful in understanding more fully than in present the distributional impacts of PWP programs, and their long term cost-effectiveness.

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Web resources:

Algeria

<http://www.msolidarite.gov.dz/dge/doc.php?t=3&d=7>

Argentina - Ministerio de Trabajo

<http://www.trabajo.gov.ar/programas/sociales/jefes/index.htm>

<http://www.trabajo.gov.ar/programas/sociales/jefes/infoyestad.htm>

http://www.trabajo.gov.ar/jefes/infostats/files/sit_regional_09-2005.pdf

Bolivia

Government's PLANE web page:

<http://www.rps.gob.bo/>

<http://www.rps.gob.bo/rps/pages/RPSMain.htm>

Directorio Único de Fondos DUF:

<http://www.duf.gov.bo/SitioDUF/Paginas/MarcoInstitucional.htm>

Colombia – Empleo en Accion

[http://www.dnp.gov.co/archivos/documentos/DEPP_Evaluacion_Impacto_RAS/RAS_\(Final\).pdf](http://www.dnp.gov.co/archivos/documentos/DEPP_Evaluacion_Impacto_RAS/RAS_(Final).pdf)

<http://www.dnp.gov.co/>

India - Department of Rural Development. Annual Report.

<http://rural.nic.in/>

Malawi

MASAF and TASAF: <http://www.masaf.org/>

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALPROTECTION/EXTSF/0,,contentMDK:20741899~pagePK:210058~piPK:210062~theSitePK:396378,00.html>

Mexico - PET

<http://www.sedesol.gob.mx/index/index.php?sec=3007&len=1>

Manual: http://www.sedesol.gob.mx/manualmicroregiones/38_SCT_PET.pdf

DATA: http://cipet.gob.mx/CIPET/htm/tr_geo-estadistica.htm

<http://cipet.gob.mx/CIPET/transparencia/2004/tr2004.cfm>

Peru'

<http://www.atrabajarurbano.gob.pe/>

<http://www.atraba00jarurbano.gob.pe/inicio.htm>

Employment generated data available organized by convocatoria

<http://www.atrabajarurbano.gob.pe/empleos.htm>

South Africa - EPWP

<http://www.epwp.gov.za/>

Tanzania

<http://www.tasaf.org/>

YEMEN public works

<http://pwp.yemen.org/default.asp?lang=en>

Appendix 1: Information needs for Monitoring and Evaluation

Monitoring and evaluation require qualitative and quantitative information collected at project site level, administration level, at household level, and at community level. Table 6 summarized examples of information that can be collected with different types of instruments. Quantitative data at project level relies mostly on the information collected routinely by the MIS, but can be complemented by project level data on a selected sample. Surveys of beneficiaries and households are crucial to get feedback from the beneficiaries and also to perform proper evaluation of the outcomes. Community level characteristics and perception are collected using surveys of local officials and communities and market surveys.

Qualitative data provides in depth information collected through intensive, often repeated interviews with individuals and communities so as to explore perception and behavior of individuals and communities respect to program implementation and outcomes. Collection techniques include key informant interviews, direct observation, and focus group (or community group) discussions.

Table 9: Examples of quantitative data to be collected for monitoring and evaluation

Level of collection	Instruments	Information
Project level	MIS registry	Input and output indicators at project level and at local level
	Project level sample collection	Efficacy of design & implementation
Household level	Beneficiary Survey and citizen report card	Access to program, service quality and satisfaction of implementation
	Cross-section household survey of beneficiaries	Profile of beneficiaries & their households
		Income, assets and welfare level
		Eligibility and participation in the program
		Amount of transfers received
		Relevance & quality of training
	Longitudinal household surveys	Similar info as in the household survey, but implies follow up of beneficiaries to gauge long term impact
Community level	Local officials interviews	Perception on the implementation issues
	Communities and village level surveys	Community characteristics in terms of labor market, wage rates, and level and quality of infrastructure
		Community perceptions of the benefit of the project

Source: Collected from different sources from authors

Appendix 2: Sample M&E Indicators for Typical Public Works Program

Input indicators

- Institutional arrangements (financing, implementing agencies)
- Budget allocation for salaries, intermediate inputs, and administration
- Amount of food available in the budget (food-for-work projects)
- Number of program staff by level

Output indicators

- *Projects*
 - Number of workfare projects and financial allocation by type (for example, with and without financing of materials) and by province or region
 - Project specific
 - Description – Including community involvement and targeting method
 - Actual kilometers of water or sewer lines or roads maintained or built
 - Cost of managerial staff (number of people and wage rate)
 - Cost of non labor inputs
 - Wages paid to (skilled and unskilled) workers (per day, per month, by province, and overall)
 - Amount of food distributed as wages (for food-for-work projects)
- Asset maintenance information: who, how frequently?
- *Beneficiaries*
 - Number of workers participating in the program
 - Number of days, wage received, months when worked
 - Total number of beneficiaries employed in each activity
 - Key characteristics of beneficiaries: gender, age, previous economic activity, education level, number of children, previous participation in an employment or training program, household income, confirmation of education and health certificates
 - Actual number of unemployed people who received the minimum wage

Intermediate outcome indicators

- *Projects*
 - Location of projects in poor areas (correlation of number of projects and total expenditures with the incidence of poverty, number of unemployed poor, and so on within the country and within provinces)
 - Quality of projects completed
 - Utilization by poor communities in the selection of infrastructure built, expanded, or rehabilitated under the program
- *Beneficiaries*
 - Number of low-income workers employed in the project (total target, gender-specific target)
 - Beneficiaries transaction costs
 - Beneficiaries experiencing payment delays as a percentage of total beneficiaries

Outcome indicators

- Increase in net annual earnings of the average individual beneficiary
- Number of program beneficiaries who transitioned from workfare to formal sector employment
- If the objective is to fight seasonal hunger: percentage of beneficiaries whose diet improved

- Increase in second-round effects resulting from projects, for example, the number of people accessing roads or other infrastructure built or maintained

Process and efficiency indicators

- *Projects*
 - Average time taken to select viable projects (in calendar days)
 - Number of projects appraised and evaluated per month (overall and by province)
 - Number of projects evaluated as a percentage of total projects per month (overall and by province)
 - Number of projects supervised per supervisor per month
 - Number of supervision visits per project per month (overall and by province)
 - Average number of supervision visits per project during project execution (overall and by province)
 - Number of workfare activities executed by province (with and without financing of materials)
 - Number of supervision visits to training courses and basic education courses
 - Percentage of projects located in poor areas (quintiles 1 and 2) (target = 100 percent)
 - Wages paid as a percentage of the contract amount
 - Average cost (and range) per project category
 - Average share of labor cost (and range) per project category
 - Average share of the cost for wages in food (for food-for-work projects)
- *Additional related objectives (such as community involvement)*
 - Percentage of projects with participation by nongovernmental organizations, civil society organizations, and so on (overall and by province)
 - Percentage of projects sponsored by nongovernmental organizations, municipalities, and the like (overall and by province)
- *Jobs*
 - Jobs provided per estimated target population (overall and by province)
 - Poor (bottom quintile) workers as a percentage of public works laborers
- *Administration*
 - Amount spent as a percentage of the amount allocated by province
 - Efficiency of employment program (value of salaries received by workers as a percentage of total government cost of program)
 - Labor intensity of projects
 - Unit cost, for example, by kilometer of road built
 - Average cost per beneficiary by project type

Appendix 3: Public Works programs, by Region, starting year, objective and targeting method.

Country, Program	Region	Starting Year	objective	targeting
Afghanistan, Labor Intensive Works Programme (LIWP)	SAR	2002	anti-poverty	combination
Algeria, l'Indemnité pour Activité d'Intérêt Général (IAIG)	MNA	1994	1-time shock	self targeting
Argentina, Jefes & Jefas	LCR	2002	1-time shock	combination
Argentina, Trabajar	LCR	1996	1-time shock	combination
Bangladesh, Food for work	SAR	1974	seasonal	self targeting
Bangladesh, Rural Maintenance Program	SAR	1983	bridge to self empl	other
Bolivia, PLANE (Red de Proteccion Social" (RPS))	LCR	end of 2001	1-time shock	combination
Botswana, Labour Intensive Public Works Project (LIPWP)	AFR	1978	seasonal	self targeting
Bulgaria, From Social Assistance toward Employment	ECA	2002	almp	other
Cape Verde, Frente de Alta Intensidade de Mão de Obra (FAIMO)	AFR	early 1980s	seasonal	self targeting
Chile, Direct Employment Programme	LCR	from 1993	1-time shock	other
Colombia, Empleo en Accion (Red de Apoyo Social)	LCR	2001	1-time shock	other
Egypt, PWP (SF for development project)	MNA	1993	anti-poverty	other
Ethiopia, Ethiopian Productive Safety Net Programme (PSNP)	AFR	2005	anti-poverty	other
India, Jawahar Rozgar Yojana JRY	SAR	1989	anti-poverty	other
India, Maharashtra Employment Guarantee Scheme	SAR	1979	guarantee	self targeting
India, NREGA	SAR	2005	guarantee	Self targeting
Indonesia, Padat Karya (labor creation program)	EAP	1998	1-time shock	combination
Indonesia, Mercy Corps' CFW programme	EAP	2005	1-time shock	other
Korea (Republic of), Public Work Projects	EAP	1998	1-time shock	other
Madagascar, HIMO (FID)	AFR	2000	seasonal	other
Malawi, Malawi Social Action Fund (MASAF) Public Works	AFR	1995	anti-poverty	Combination
Malawi, Region Infrastructure Maintenance Programme (CRIMP)	AFR	1999	bridge to self empl	other
Mexico, Programa de Empleo Temporal (PET)	LCR	1995	1-time shock	other
Morocco, Promotion Nationale	MNA	1961	anti-poverty	combination
Pakistan, Income Generating Project for Refugee Areas (IGPRA).	SAR	1984	anti-poverty	combination
Peru, "A Trabajar Rural"	LCR	2002	1-time shock	combination
Peru, "A Trabajar Urbano"	LCR	2002	1-time shock	combination
Poland, PW	ECA	1992	almp	other
Slovenia, PW	ECA	early 1990s	almp	other
Somalia, Action Contre la Faim (ACF)'s cash for work	AFR	2004	seasonal	other

South Africa, Expanded Public Works Program (EPWP)	AFR	2004	anti-poverty	combination
Tanzania, TASAF Public Works Programme Component	AFR	2000	seasonal	combination
Thailand, SIP (first channel)	EAP	1998	1-time shock	combination
Uruguay, Programa de Actividades Comunitarias	LCR	2003	1-time shock	combination
Yemen, (Republic of), Public Works Programs	MNA	1996	1-time shock	combination
Zambia, Public Works	AFR	2002	anti-poverty	combination

Appendix 4: Public Works programs, by type of work performed, and labor intensity.

Country, Program	Types of work performed	Labor intensity	L/M/H
Afghanistan, Labor Intensive Works Programme (LIWP)	Road construction, rehabilitation rural infrastructures.	70-80%	H
Algeria, l'Indemnité pour Activité d'Intérêt Général (IAIG)	Community based activities, such as reforestation.	80%	H
Argentina, Jefes & Jefas	Community services, construction, rehabilitation, and maintenance of small infrastructure facilities, and the execution of productive projects (on a pilot basis).	around 40%	L
Argentina, Trabajar	Infrastructures building, maintenance.	about 60%	H
Bangladesh, Food for work	Rural roads construction.	60-70%	H
Bangladesh, Rural Maintenance Program	Rural road maintenance.	–	–
Bolivia, PLANE (Red de Protección Social" (RPS))	Cleaning, maintenance, construction of infrastructures.	–	–
Botswana, Labour Intensive Public Works Project (LIPWP)	The task, which mainly involves maintenance of dirt roads, is physical and strenuous.	78% (63%?)	H
Bulgaria, From Social Assistance toward Employment	Construction and renovation works, social and other such works, environmental cleanup.	–	–
Cape Verde, Frente de Alta Intensidade de Mão de Obra (FAIMO)	Rural roads, infrastructure in support of soil and water conservation.	–	–
Chile, Direct Employment Programme	Cleaning, improvement and maintenance of social infrastructures, and environment protection.	–	–
Colombia, Empleo en Acción (Red de Apoyo Social)	Maintenance & construction of urban and social infrastructure.	–	–
Egypt, PWP (SF for development project)	Construction, rehabilitation and repair of irrigation and drainage canals, water supply and sewerage systems, rural roads and streets, and public buildings, and maintenance including canal cleaning, public buildings, solid waste collection, and disposal.	30% average	L
Ethiopia, Ethiopian Productive Safety Net Programme (PSNP)	Improved land productivity, soil fertility restoration / increased land availability / improved market infrastructures (access) / improved access to drinking and irrigation water / improved schools and health facilities). Activities should be at the community level.	–	–
India, Jawahar Rozgar Yojana JRY	Creation of rural economic infrastructures and community assets (eg. Schools, roads, other infrastructures)	60%	H
India, NREGA	Renovation of traditional water bodies; provision of irrigation facility; Micro irrigation works; drought proofing; flood control and protection; rural connectivity; land development.	60%	H
India, Maharashtra Employment Guarantee Scheme	Water conservation works (e.g percolation and storage tanks), soil conservation and land development works, afforestation, roads, flood protection schemes. Multi-sectoral (irrigations, agric, soil conserv, rural roads...). construction of infrastructures in rural areas.	60-70%	H
Indonesia, Padat Karya (labor creation program)	Building/repairing roads, drainage for agriculture, irrigation system / cleaning up slums areas, maintenance sewerage pipes / Rehabilitation of transportation infrastructure, e.g. roads, bridges.. / programs in the forestry sector..	About 41%	M
Indonesia, Mercy Corps' CFW programme	Facilitate clean-up and reconstruction in areas hit by the tsunami	>= 60%	H
Korea (Republic of), Public Work Projects	Infrastructure maintaining; social services; environment cleaning work; information technology projects.	70%	H

Madagascar, HIMO (FID)	rehabilitation and reconstruction of damaged or destroyed infrastructures after natural disasters	80%	H
Malawi, Malawi Social Action Fund (MASAF) PW	Rural road maintenance	>=40%	L
Malawi, Region Infrastructure Maintenance Programme (CRIMP)	Activities supported include road construction and maintenance, irrigation infrastructure, flood control infrastructure, Afforestation, soil conservation and water retaining infrastructure.	–	–
Mexico, Programa de Empleo Temporal (PET)	Maintenance and construction of rural infrast, mainly rural roads.	50%	M
Morocco, Promotion Nationale	<i>Chantiers d'equipment</i> : construction and rehabilitation of rural infrastructures (rural roads, rural water supplies, schools, health centers, reforestation, small irrigation canals) / <i>chantiers collectives</i> : by which administrative posts are funded mainly for provincial authorities and local municipalities as well as salaries of subordinate staff in hospitals,... / special programs for saharan regions: comprising all types of rural infrastructures to alleviate the negative effects of droughts.	75%	H
Pakistan, Income Generating Project for Refugee Areas (IGPRA).	Reforestation, catchments management, the repair and improvement of irrigation and drainage systems, flood protection and river training, and road improvement.	60%	H
Peru, "A Trabajar Rural"	Rehabilitation, maintenance, and improvement of basic infrastructures (schools, health centers, rural roads)	about 50%	M
Peru, "A Trabajar Urbano"	Cleaning, maintenance, and construction of infrastructures.	>=75%	H
Poland, PW	Infrastructural investments. Public works are carried out primarily in the framework of infrastructural investments, i.e. building a water supply system, a gas grid, a telephone network, a sewage treatment plant and also in construction and fitting works.	–	–
Slovenia, PW	Environmental and rural programs, and municipal services, also including providing child care and assistance to the elderly, education and culture.	–	–
Somalia, Action Contre la Faim (ACF)'s cash for work	Water catchments' rehabilitation (mainly used to provide drinking water for animals).	–	–
South Africa, Expanded Public Works Program (EPWP)	Maintenance of infrastructure and environment, social and economic employment opportunities	–	–
Tanzania, TASAF Public Works Programme Component	Construction/rehabilitation of basic health care facilities, schools, boreholes, dams, latrines, shallow wells, and economic infrastructure.	40%	L
Thailand, SIP (first channel)	Community development works	about 16%	L
Uruguay, Programa de Actividades Comunitarias	Maintenance, rehabilitation of urban and social infrastr. (schools, health centers), protection of the environment, and also construction of urban infrastructures.	–	–
Yemen, (Republic of), Public Works Programs	Community Infrastructure. Small-scale civil works in areas with above-average unemployment rates for construction, rehabilitation, and/or extension of infrastructure works.	43%	M
Zambia, Public Works	Construction, repair, rehabilitation, and maintenance to public assets in 38 districts in poor rural and urban districts most affected by the drought using labor intensive work methods. Assets include feeder roads, community roads, roads in periurban and urban areas, sanitation and drainage structures in urban and rural areas.	at least 60%	H

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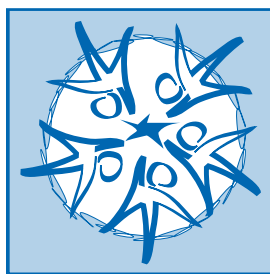
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Summary Findings

This paper reviews the experience with public works programs (PWP) in several countries over the past 20 years to delineate use patterns and to determine the factors contributing to its use as a successful safety net program. The analysis shows that PWP have been used extensively in response to either a one-time large covariate shock, or repeated shocks. In low income countries, PWPs also have an antipoverty or poverty reduction objective. Our review shows that well designed and implemented PWPs can help mitigating income shocks; the program can also be used as an effective anti-poverty instrument. The paper examines the factors behind the observed wide variation in the effectiveness of the program in accomplishing its goals and identifies prerequisites for making PWPs successful safety net interventions capable of protecting the poor from income shocks, thus reducing both temporal and seasonal poverty, while creating useful public goods or services for the communities. For PW programs to be successful, it is important firstly to: a) have clear objectives; b) select projects that can create valuable public goods; and c) ensure predictable funding. Secondly, the success of the program depends critically on careful design and incorporation of all the key design features. Finally, a credible monitoring and evaluation system designed right upfront, prior to launching of the program can allow for mid course corrections and to respond to sudden changes which can inhibit effective implementation. The potential of the PWP program is enormous both in countries that have experiences with these programs and especially in countries that never used them. However, more research is needed investigation is needed to better understand the impact of PWPs, such as second round effects from the created assets, the impacts on the labor market, and their cost-effectiveness after factoring in both the immediate and second round benefits from its program.

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