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Towards acceptable wages for public employment programmes

A guide for conducting studies for wage setting and estimating labour supply response

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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on *Social Justice for a Fair Globalization, and*[1] which has now been widely adopted by the international community.

In order to support member States and the social partners to reach the goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations of this integrated approach and related challenges are contained in a number of key documents: in those explaining and elaborating the concept of decent work[2], in the Employment Policy Convention, 1964 (No. 122), and in the Global Employment Agenda.

The Global Employment Agenda was developed by the ILO through tripartite consensus of its Governing Body's Employment and Social Policy Committee. Since its adoption in 2003 it has been further articulated and made more operational and today it constitutes the basic framework through which the ILO pursues the objective of placing employment at the centre of economic and social policies.[3]

The Employment Sector is fully engaged in the implementation of the Global Employment Agenda, and is doing so through a large range of technical support and capacity building activities, advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.[4]

The *Employment Working Papers* series is designed to disseminate the main findings of research initiatives undertaken by the various departments and programmes of the Sector. The working papers are intended to encourage exchange of ideas and to stimulate debate. The views expressed are the responsibility of the author(s) and do not necessarily represent those of the ILO.

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[1] See http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf

[2] See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

[3] See http://www.ilo.org/gea. And in particular: *Implementing the Global Employment Agenda: Employment strategies in support of decent work, "Vision" document*, ILO, 2006.

[4] See http://www.ilo.org/employment.

Foreword

Wages play a crucial role in determining how efficient employment and social protection programmes can be in terms of graduating people out of poverty. There is a renewed interest in this area because of a range of wider innovations linked to increased recognition of the longer term potential of public works programmes (PWP) and possible employment guarantee schemes (EGS) in contributing to social protection, infrastructure and service provision, and in making labour markets work more effectively for the poor. These programmes can be essential instruments for an inclusive growth path if appropriately designed and implemented; the wage rates are one of the most important design factors whether the programmes are implemented by private operators or public sector agencies. Appropriate wage levels are also key in fostering sustainable enterprises in these sectors.

Many governments find themselves in a situation where unemployment and other employment-related problems are continuous challenges – they do not occur only in times of crisis. The jobs crisis is a result of structural unemployment as a result of jobless growth in many areas of the world with markets unable to create sufficient employment at the scale required. Developing infrastructure, assets and services that promote social and economic development is widely used as a tool, whether in response to a crisis recovery plan or as part of longer term, counter-cyclical employment policy. Strategically enhancing employment outcomes of such regular investments in infrastructure is one way, which can also be complemented by specially funded public employment programmes such as PWPs and EGSs. These are key instruments that can be used to protect the most vulnerable against different shocks. There is a strong potential synergy between such approaches and the emphasis on infrastructure development in many recovery plans because of infrastructure's strong direct and indirect employment multiplier effects. Public funding through regular investments and counter-cyclical spending in infrastructure are already widely used to expand demand for private enterprises, and to create and sustain jobs.

As indicated above, these programmes can play many different functions, and should therefore be designed with clearly defined objectives. Such programmes are labour market interventions of which the ultimate aim should be to increase productivity and incomes, and indeed make a positive contribution to an inclusive growth path, while creating the often very much needed assets and services, while contributing to better employability. Wage rates have different impacts on a programme's efficiency and in reaching intended beneficiaries, and therefore the potential positive or negative impact on those not directly benefitting need to also be taken into account.

This guide is meant to underpin the policy dialogue that is recommended, and indeed is necessary, to determine the widely acceptable objectives of programmes and to ensure wage determination as part of an efficient programme design. The guide deals with the contexts (section 3), data availability and collection (sections 4 and 5) and data analysis and presentation (sections 6 and 7) for wage setting and labour supply in public employment programmes. It furthermore presents some essential considerations (section 8) complementary to the wage setting issues.

The guide forms part of a broader toolbox of the Employment-Intensive Investment Programme (EIIP) in the Employment Policy Department of the ILO. The complementary issues are dealt with at length in this toolbox that is available to member States and constituents for capacity building in the area of design, implementation, monitoring and evaluation of efficient employment generation programmes through infrastructure and employment programmes.

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The main lessons on which this guide is based are drawn from three recent studies, in South Africa, Timor Leste and Cambodia. I would like to thank all the colleagues who worked with me on the studies or provided help and support during them. In particular I would like to mention Farhad Ahmed, Thomas Stenstrom, Geoff Edmonds and Tong Kimsun.

List of abbreviations

CARD	-	Council for Agricultural and Rural Development (Cambodia)
CCT	-	Conditional Cash Transfer
CDRI	-	Cambodia Development Resource Institute
EGS	-	Employment Guarantee Scheme
EG	-	Employment Guarantee
ELR	-	Employment of last resort
EPWP	-	Expanded Public Works Programme (South Africa)
FFW	-	Food for Work
FGD	-	Focus group discussion
GHS	-	General Household Survey
Hh	-	Household
ILO	-	International Labour Office
LB	-	Labour-based
LI	-	Labour intensive
MEGS	-	Maharashtra Employment Guarantee Scheme
MOPS	-	Moving Out of Poverty Study
NREGS	-	National Rural Employment Guarantee Scheme (India)
MGNREGA	-	Mahatma Gandhi National Rural Employment Guarantee Act
PEP	-	Public Employment Programme
PSNP	-	Productive Safety Net Programme (Ethiopia)
PWP	-	Public works programme
RW	-	Reservation wage
TL	-	Timor Leste
WFP	-	World Food Programme

Exchange rates:

$ in the guide refer to US$ or its equivalent converted at the exchange rate from other currencies at the time of the studies.

$1.0 = 4215 Cambodian Riel at the time of the study in October to December 2009

$1.0 = 33.3 Thai Baht at the time of the Cambodia study in October to December 2009

$1.0 = 7.15 ZAR (South African Rand) in mid-2007

1. Context and introduction to the guide

1.1 Public works programmes, social protection[5] and improving public assets

There is renewed interest in and commitment to developing public works programmes (PWPs) and employment guarantee schemes (EGSs) in many developing countries with a view to combining the objectives of generating short term employment, contributing to poverty alleviation and creating and preserving infrastructure and other assets. The impetus comes from three main sources. The first is the demonstration effects of large programmes such as the Trabajar and Jefes programmes in Argentina, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA[6]) in India, the Expanded Public Works Programmes (EPWP) in South Africa and the Productive Safety Net Programme (PSNP) in Ethiopia[7]. The second is the problems of high and persistent levels of unemployment, underemployment and related poverty many developing countries face. The third is the urgency to develop public works programmes as a means of delivering social protection to the poorest and most vulnerable afflicted by higher global food prices and the global financial crisis in the latter part of the 2000s.

A major problem in most developing countries is growing inequality in the standard of living and the related challenges of improving the livelihoods of the poor and vulnerable. It is recognized that to reduce poverty and inequality, longer term inclusive or pro-poor growth and development strategies are required (Selim, 2006). Improving the quality and quantity of employment are important ingredients of such strategies (OECD, 2009). However, significant levels of rural poverty will persist for many years to come and therefore social protection will be required in the short and medium term to protect the poorest and most vulnerable.

One social safety net instrument is paid work on public works programmes (PWPs). The rationale for public works programmes as an instrument of social protection is to use public finances and/or external assistance (see del Ninno et al, 2009):

- to provide employment and incomes for the poor unemployed or underemployed, and
- at the same time to improve the physical infrastructure or other public assets which could have longer term economic and social benefits.

According to del Ninno et al (2009), McCord (2009 and 2012) and Subbarao et al (2013), PWPs may be short-term relief programmes in response to natural or economic shocks, long-term employment creation programmes to absorb structural unemployment or income augmenting programmes to supplement the normal earning activities of participants. The above categorization of PWPs appears to put greater emphasis on the social protection objective than improvement of public assets. Programmes focused on

[5] While the term "social protection" is used as a common usage term in this section, it has a more precise meaning in the literature. Therefore, it is replaced by the term "safety net" in the guide in section 2 and later sections (see section 2 for more explanation).

[6] The scheme is commonly referred to as the Mahatma Gandhi National Rural Employment Guarantee Act, the act by which it was created and hence the abbreviation MGNREGA is used

[7] For more discussion of these programmes see del Ninno, Subbarao and Milazzo (2009) and Lieuw-Kie-Song, Philip, Tsukamoto and Van Imschoot (2010).

efficient creation or maintenance of infrastructure assets with employment creation being a consequence of appropriate labour intensive or labour-based methods being cheaper are also PWPs. The challenges in enhancing the role of PWPs as social protection instruments are: (a) to improve the public asset improvement aspect of programmes with a greater emphasis on the social protection objective, and (b) to expand cost-efficient labour intensive and labour-based low cost infrastructure programmes to increase their scale and scope and hence their contribution to social protection.

1.2 Importance of the public works wage rate

The wage rate is one of the most important design aspects of PWP based social protection (del Ninno et al, 2009; Devereux, 2002; McCord, 2012; Samson et al, 2010, and Subbarao et al, 2013). In developing public employment programmes (PEPs), which cover the spectrum of options from PWPs to EGSs and include activities other than public works[8], the level of wage rate to be offered and the labour supply response are important since they affect the scale and type of their employment and poverty alleviation impacts, their effectiveness in implementing public works and the cost of programmes. The aim here is to provide a guide on how to conduct wage rate and labour supply response studies for principally rural[9] public works programmes combining creation of infrastructural or environmental assets and their maintenance[10] with employment generation and social protection objectives, how to present the evidence from such studies and how to use the evidence in decision making and policy analysis. Public works activities are also referred to as asset creation or maintenance (or preservation in places) in this guide.

The guide draws on the approaches used by the author on recent studies in South Africa, Timor Leste and Cambodia[11] as well as evidence from studies by others on PEPs and earlier studies by the author in Africa and Asia. The three countries (South Africa, Timor Leste and Cambodia) exhibit different features with respect to the rural economy and labour market, the nature of the unemployment and underemployment problem and its relationship with poverty and vulnerability and reasons for developing PEPs. As a consequence of these differences and policy approaches adopted, there are differences in the types of PEP interventions in place or being developed. In addition, there were differences between countries in the availability of data required for the studies and in the resources and capabilities available for collecting the data. The terms of reference for the studies also varied.

The differences between the contexts for the studies and the different approaches adopted are highlighted in later sections. Principally, the context differences are outlined in section 3, differences in data availability and collection approaches in section 4 and 5 and differences in the use of data and analysis in section 6. Drawing on these differences has made it possible to demonstrate how the studies can be adapted to suit different circumstances with emphases on different types of issues to be addressed.

[8] See section 2.1 for more details on differentiation between different types of PEPs and the terms used for them in this guide.

[9] The guide focuses on studies for public works programmes in the context of the rural economic and labour market situation. It can be applied to the urban context with some adaptations, for example, to take account of the urban economic and labour market context.

[10] In this context, the term "public works" refers to "the creation of physical assets of value to communities such as feeder roads, small-scale irrigation infrastructure, and/or the maintenance of existing infrastructure" (Subbarao, 2013) and environmentally sound infrastructure investments and environmental protection measures (ILO Employment Intensive Investment Programme, Regional Office for Asia and the Pacific, 2011).

[11] These studies are in the list of references as Vaidya and Ahmed (2007), Vaidya (2008) and Vaidya (2010) and referred to in this guide as South Africa study, Timor Leste study and Cambodia study respectively.

While the appropriate wage rate is important, it has to be complemented by suitable policies and measures on the method of payment, planning, implementation, supervision and provision of complementary inputs for meeting the twin objectives. These aspects are beyond the scope of this guide but some reference is made to them, especially in the final section of the guide.

The benefits which well managed public employment programmes can deliver (adapted from Subbarao, 2003) and some conditions required for their success are summarized below (also see Lieuw Kie Song et al, 2010, for more discussion on this issue).

- They provide transfer benefits to the poor where the transfer benefit is the wage rate, net of any costs of participation incurred by the worker. In countries or regions with high rates of unemployment and underemployment, transfer benefits make an important contribution to the incomes of households with unemployed or underemployed persons. Many of these households are likely to be poor.
- They may also confer consumption-smoothing or stabilization benefits depending on the phasing of the work. If the work is scheduled during the agriculturally slack seasons, it will not conflict with demand for labour in agriculture. Further, to the extent that agriculturally slack seasons are also lean seasons for poor households, for example for households of agricultural workers, income from programme employment would provide income smoothing.
- They are amenable to geographic targeting. Poor areas and communities can benefit directly from such programmes (i.e. the transfer and consumption smoothing benefits), and indirectly from the physical assets created and maintained, thus combining the social protection and improvement of long-term growth prospects in poor regions.
- They construct or maintain much-needed infrastructure of economic and social value. The infrastructure could be local and small scale and of direct relevance for the immediate community or larger projects offering wider benefits. Lessons from international evidence show that for effective operation, such projects require competent management and sufficient technical input and support..
- Infrastructure projects which respond to the local community's priorities and are amenable to construction by the local community with limited technical support and supervision and using a local resource-based approach work better. Examples include construction, maintenance and repairs of local roads and tracks, small irrigation canals and community buildings. Larger projects such as construction and maintenance of more important roads are very suitable for employment generating public works programmes but they require a significant proportion of non-labour and technical inputs and should be implemented at a higher administrative level but with appropriate local participation. A spin-off from public works programmes with local participation in establishing priorities, selecting projects and implementation is the development of the capacity of local government and local communities to manage their own affairs and implement projects.
- Programmes can be designed and implemented to encourage participation and empowerment of women and disadvantaged groups.
- If properly designed, public employment programmes will not only offer employment, income transfer and assets, but through appropriate skills training they can also contribute to better employability and graduation strategies.

The level of the PEP wage rate is clearly important for the transfer and consumption smoothing benefits. Further, the level of incentive they offer is important for the effectiveness of the improvement of public assets.

1.3 Plan of the guide and how to use it

In summary, the four aspects that a wage rate and labour supply study[12] investigates are:

- the labour supply response to alternative wage rates;
- the implications of PEP participation for other economic activities;
- to what extent alternative wage rates target poorer sections of the population, and
- the welfare impact of PEP earnings at alternative wage rates.

The context and the objectives and types of programmes vary and this has implications for the appropriate wage rate, the labour supply response and the other related aspects (i.e. the welfare impact, implications for other economic activities and programme costs).

Therefore, a wage rate study has to be adapted to the local and programme specific contexts which consist of:

- the local economic, socio-economic and labour market conditions;
- the objectives of the public works programme to be developed or in existence;
- the broader policy context, and
- availability of data and the ease or otherwise of data collection.

Studies of this type are not standard appraisal or measurement exercises but creative acts of using some principles and approaches to come up with findings. Use of judgment is also necessary in designing the study, arriving at the findings and presenting the results. The aim of this guide is to provide the basic knowledge and introduction to the tools required to undertake the studies.

In section 2, we set out the terminology to be used in the guide and review the different types of PEPs with differing emphases between objectives and related implications for wage rates. This review is a basis for identifying the types of PEPs for which the study is to be conducted. Section 3 outlines the principles and issues relevant for (a) estimating likely labour supply responses to alternative wage rates (the magnitude of response as well as the types of participants); (b) setting wage rates for PEPs, and (c) assessing the effect of the wage rate and the labour supply response on a PEP's welfare impact and programme costs. Such a review would form the basis for the labour market, poverty and vulnerability part of the situation analysis for a wage rate study.

The appraisal of the types of PEPs, the labour market, poverty and vulnerability situation is the context for setting out the questions to be addressed by the study, its design, data requirements, the data to be collected and the approach to collecting the data. It is possible that the required data may exist[13]. In many cases this will not be the case and collection of qualitative and quantitative data on economic activities, earnings and standards of living of households will be required. Further, the type of data it is feasible to collect will also vary, depending on the financial and human resources available and timescale. Section 5 addresses these issues.

[12] Henceforth also referred to as just the wage rate study in places.

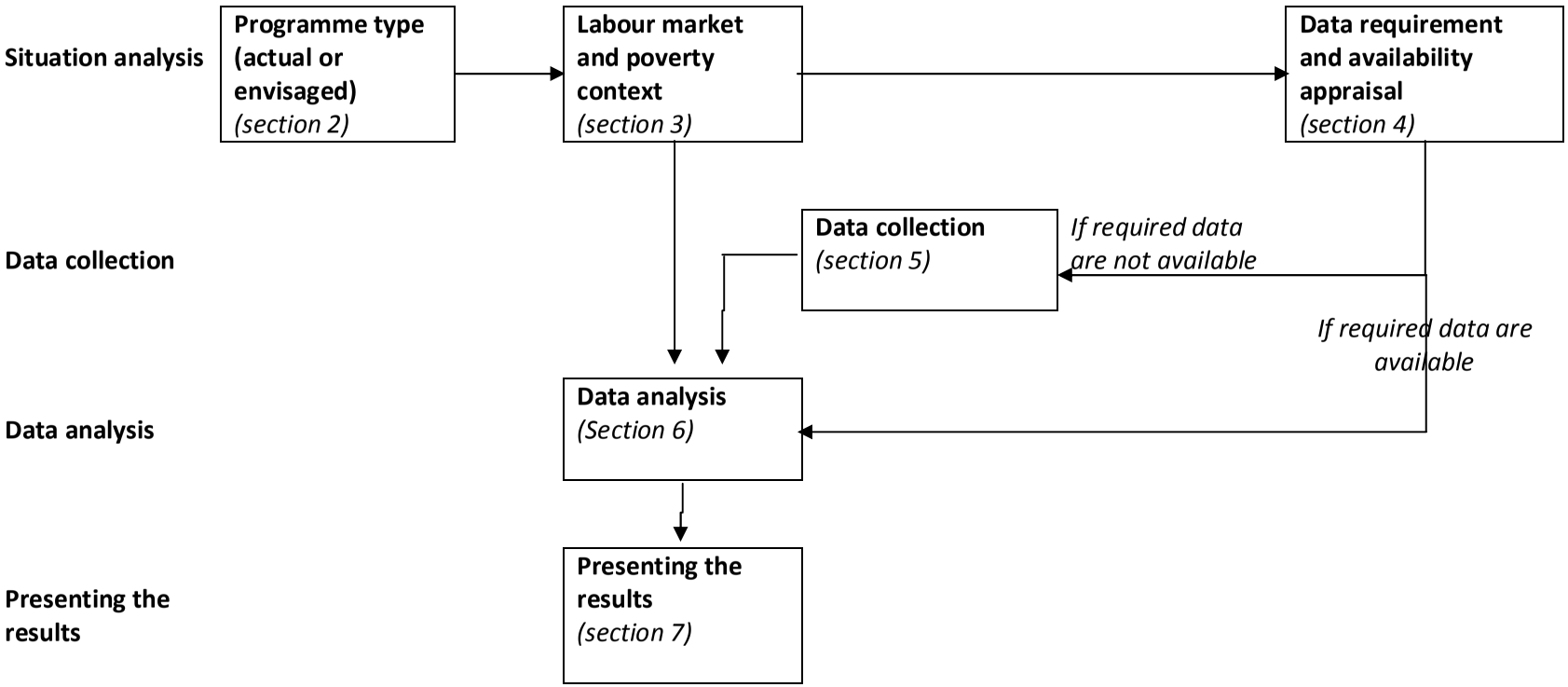
[13] This was the case in the South Africa study (Vaidya and Ahmed, 2007) in which the brief was narrow, limited to the investigation of the relationship between the wage rate and labour supply response and the type of data required was available from a household survey undertaken by Statistics South Africa.

Sections 6 and 7 focus on the analysis of the data and presentation of results for decision making which are concerned not only with setting the appropriate wage rate but also examining the implications of the wage rate for the welfare impact (how much contribution is made to the livelihoods of participants' households and how effective the PEP is in targeting the poor). As noted earlier, while the wage rate is a very important design element of a PEP, its effectiveness in achieving the objectives of a PEP depends on a number of complementary policy and implementation aspects. These are outlined in section 8. In summary the rest of the guide is organised as follows.

Section 2	Types of programmes and implications for wage setting.
Section 3	The PEP wage rate, labour supply and PEP objectives.
Section 4	Investigating data requirements and availability.
Section 5	Conducting surveys and other data collection.
Section 6	Data presentation and analysis.
Section 7	Presenting the analysis and evidence.
Section 8	Complementary considerations.

Figure 1.1 presents a flowchart which sets out the four phases of a study of this type and relates them to the sections of the guide. Following the first phase, situation analysis with three components, there is a straight forward sequence of phases. Clearly, where existing data are available (obtained during the situation analysis phase); the data collection phase is not required. Section 8 is not part of the flow chart because it briefly addresses complementary aspects not directly related to the conduct of wage rate and labour supply studies.

Figure 1.1: The scheme for a wage rate study and a flow chart



2. Types of programmes and implications for wage setting

2.1 Introduction and terminology

This section sets out the context for the guide by introducing the types of programmes which attempt to combine the objectives of employment creation, poverty alleviation and creation and/or preservation of public works or other assets of public value. The assets of public value typically include roads, irrigation and water supply structures and public buildings but may also encompass conservation and environmental protection projects. The term public works is commonly used for such programmes as some of the sources cited in the previous section (for example, del Ninno et al, 2009, McCord, 2009, and Subbarao, 2003) show.

An ILO study by Lieuw-Kie-Song et al (2010) notes that employment generating programmes have widened their scope to encompass work in the social sector, environmental services, and multi-sectoral and community driven programmes. Further, a variation on conventional public works based programmes, which offer a given level of employment over a specified time scale in public works, are those which offer some level of entitlement to a given amount of paid work. Programmes with such entitlements are referred to broadly here as employment guarantees. Programmes with rights based employment guarantees are rare[14] but a number of programmes offer some level of entitlement to work for specific groups and therefore fall somewhere between conventional public works based programmes and employment guarantees.

The literature on public employment programmes uses different terms to describe different types of programmes. To avoid confusion, this guide follows the Lieuw-Kie-Song et al (2010) terminology under which all programmes aimed at creating employment, especially for the poorer sections of the population, are referred to as Public Employment Programmes (PEPs) which encompass non-public works based employment programmes as well as traditional public works programmes (PWP) and employment guarantee schemes (EGS) which generate employment through public works and variants falling between PWPs and EGSs.

The focus of this guide is on wage rates and labour supply for public works based PEPs[15] (i.e. PWPs and EGSs and their variants). Two important social protection or safety net objectives of such programmes are to (a) alleviate the acute effects of crises on the livelihoods of the poorest and most vulnerable, or (b) as longer term programmes in response to chronic levels of unemployment, underemployment and associated poverty (McCord, 2008). Grosh et al (2008) broadly define "safety nets" as "non-contributory[16] transfer programs targeted in some manner to the poor or vulnerable". PEPs as a broad category fall within this definition[17]. As safety nets, they can also be referred to as conditional cash transfers (CCTs) since payment is typically in return for unskilled or semi-skilled work on public works projects. However, the term CCT is more commonly used to

[14] MGNREGA in India referred to in the previous section is one of the rare examples.
[15] Where the term PEP is used in the rest of this guide, it refers to public works based PEPs.
[16] As opposed to contributory programmes to which beneficiaries contribute to build up a fund from which payments are made. The payments may be deferred (e.g. pensions) or conditional (e.g. unemployment insurance under which payments are made when beneficiaries are unemployed).
[17] Grosh et al (2008) include "Jobs on labor-intensive public works schemes, sometimes called workfare" in their list of types of safety nets.

refer to cash transfers conditional upon participation in prescribed levels of services such as education and health.

The terms "safety net" and "social protection" are sometimes loosely used interchangeably. Intuitively, social protection is a preferable term for income support through PEPs since it can offer regular and predictable income transfer and in some cases participation is an entitlement – as in the case of an employment guarantee. PEPs can encompass different levels of protection and there are differences in relative importance of social protection and asset creation or preservation objectives. However, the term "social protection" is often used to include safety nets, social insurance programmes such as pensions and unemployment insurance. PEPs are sometimes referred to as productive safety nets because of the combination of the safety net objective with public asset creation or preservation[18]. Following the broad definition in Grosh et al (2008), the rest of the guide will refer to income support through work provided by PEPs as the safety net objective.

2.2 Differences in emphases between objectives

It is important to be clear about the types of programmes and projects for which this guide is intended, for undertaking wage rate and labour supply studies for public works based PEPs of relatively long duration[19] and of some size. By virtue of these two features and the combination of objectives, they are interventions in the labour market and do not simply accept the status quo. Implicit in these interventions is the supposition that the existing labour market conditions are "dysfunctional for much of the poor population" (Lieuw Kie Song et al, 2010) since they offer very inadequate livelihoods.

By implication, this guide is not relevant for emergency relief programmes set up immediately after a natural or economic shock. Such programmes normally have to be set up under difficult circumstances in a hurry with very little preparation. Therefore, cash for work as a safety net objective tends to dominate, the work undertaken being activities to repair damage after a natural disaster and to contribute to the reconstruction. Emergency relief programmes could however provide an impetus for establishing an emergency relief programme to be mobilized for future shocks or a longer term PEP. The guide is also not intended for smaller projects with marginal impact on the employment and poverty situation. Nevertheless if wage rate and labour supply studies are required for such projects, this guide could be of relevance.

The longer duration and large size of PEPs should not be taken to imply continuous participation by individuals over long stretches of time and large disruptions in other economic activities as a consequence. Seasonal phasing of PEP activities is important for labour market reasons or other reasons such as climatically suitable times of the year for public works. Further, the balance of objectives also dictates the timing and amount of PEP activity. For example, a PEP primarily focused on providing a safety net for poor and vulnerable households following natural or economic shocks with limited activities during the rest of the time would function very differently from one which aims to address long-term chronic needs of the unemployed where alternative economic opportunities are very limited. Financial resource constraints and implementation capacity may also limit the programme scale and the amount and duration of employment offered.

[18] The public works programme in Ethiopia referred to in the previous section is known as the Productive Safety Net Programme.

[19] A distinction is made between the size and duration of a programme and the length of employment episodes provides to participants which will tend to be shorter. This distinction is elaborated below.

Establishing the appropriate balance between the objectives of a PEP and ensuring that the programme can deliver the objectives is clearly a major challenge. In practice, PEPs have different emphases between objectives which have implications for the appropriate wage rates as well as complementary aspects such as the types of public works which can be implemented effectively and the technical and management support required. While each PEP may be distinctive because of its context and balance between objectives, for the purpose of this guide, the aspects of importance are:

- the objectives of the PEP and especially the balance between the safety net and assetcreation and maintenance functions, and
- the scale and scope of the PEP and whether its cost and affordability are issues the study is required to investigate.

For the purpose of this guide, the core aspects of the balance between the asset creation or maintenance and safety net functions can be encapsulated by the following broad characterisation of PEPs:

- employment creation oriented or “labour intensive (LI)”;
- public assets creation or maintenance oriented or “labour-based (LB)”, and
- employment guarantee schemes (EGS).

The LI and LB type programmes fall broadly within the traditional public works programme (PWP) category. An EGS, as the term implies, offers guaranteed employment of a certain number of days in a year at a given wage rate to all those who wish to take advantage of it. EGSs may encompass LI and LB components.

Table 2.1: What kinds of PEPs? Objectives and implications for wage rates, balance between objectives and resource commitments

	PWPs		Employment guarantee schemes (EGSs)
	Employment & poverty emphasis ***(Labour intensive - LI)***	**Asset creation or maintenance emphasis** ***(Labour-based - LB)***	**May include LI and LB components**
Brief description and objective	Creation of maximum employment for a given level of resources during a limited timeframe.	Appropriate labour and light equipment combination for effective and efficient infrastructure works.	Guarantee of a given number of days of employment for all who claim the right.
Resource commitment and implications	Employment created depends on the budget and wage rate.	LB methods used if technically satisfactory and cost effective. Wage rate affects cost and competitiveness (in comparison with more equipment-based methods).	Generally high and dependent on the wage rate and take up.
Implications for the wage rate	Needs to be somewhat lower than the prevailing wage rates and opportunity cost of labour. But less impact on welfare if too low. Wage rate may be set above market wage rate to set a floor for welfare reasons because market wage rate is too low.	Needs to be set in relation to prevailing wage rates, opportunity cost of labour and budget and cost effectiveness considerations. Efficiency wage[20] premium may be required as an incentive to improve productivity and quality.	Must be low in relation to prevailing wage rates and opportunity cost of labour. But less impact on welfare and low effectiveness if too low. Wage rate may be set above market wage rate either to comply with minimum wage regulations and/or to set a floor for welfare reasons because market wage rate is too low.
Beneficiary targeting	Self targeting if wage rate sufficiently low (though not necessarily targeting the poorest households, see section 3.4 for discussion). Additional criteria often needed for beneficiary selection or rationing of access to programme.	Self targeting if wage rate sufficiently low (though not necessarily targeting the poorest households). But self targeting unlikely because of efficiency wage premium. Normally requires participant selection or rationing of access to programme.	Self targeting and universal access but rationing (e.g. one per household and/or number of days of employment per household) is typically needed because of resource constraints.
Effectiveness in asset creation and maintenance	Depends on the types of construction and maintenance works and adequate technical and management support and monitoring.	Very effective if well implemented with adequate technical planning, supervision and monitoring and wage rates reflecting the efficiency wage premium if necessary.	Effectiveness depends on the type of approach (LI or LB) and complementary conditions (see the LI and LB columns in this table).

Table 2.1 sets out the implications for wage rates and the balance between objectives and resource commitments. The table shows that LI programmes within the traditional PWP category aim to create the maximum amount of employment within a given budget.

[20] See discussion of this table for explanation of the term "efficiency wage".

Short-term public works employment as a means of supporting the participants through payment of cash or food is typically the main objective of LI programmes. To maximize payment to labour[21], resources devoted to tools, equipment, technical planning and supervision and management are kept low. If the wage rate for LI projects is too high in relation to the prevailing market wage rate, the problems will be fewer persons benefiting from the programme and possible damaging effects on other economic activities. However, the damaging effects on other economic activities may not be serious if work on such projects is planned for less busy agricultural periods and other economic activities are limited at those times.

Even if damaging effects on other economic activities are not an issue, more people will want to benefit from the project than resources permit if the wage rate is too high. Therefore, the wage rate by itself will not be an effective instrument for rationing access to a programme employment and other criteria and procedures will be needed to select beneficiaries. If satisfactory, objective and transparent criteria for identifying the poor are not available or the processes for ensuring that the poor gain access to LI projects are ineffective and opaque, there is high risk that the better off and those with influence will benefit from the programme at the expense of the intended poorer beneficiaries.[22] An argument for using the wage rate for rationing access to LI projects is to avoid the higher costs of the alternative administrative structures and processes required to determine eligibility for participation and the higher risks of leakage generally associated with such processes. However, relying solely on a low wage rate as a targeting device may not be effective in targeting the poorest households and would have a lower welfare impact.[23]

As Table 2.1 indicates, LB programmes are generally less labour intensive than LI. The choice of technology, while preferring use of labour, is determined by effectiveness and efficiency in achieving the outcomes (i.e. creation, rehabilitation or maintenance of infrastructure or other assets). Typically, for rural road rehabilitation and construction, the choice of technology found to be most appropriate is labour supported by light equipment (for example, small mechanical rollers for compaction and trucks for hauling material over longer distances). Maintenance by its nature generally has the potential to be more labour intensive but the appropriate combination of labour and tools and equipment is determined by technical and cost effectiveness considerations.

For a given amount of resources, the LB approach will typically create less employment than the LI approach. However, the LB approach is more effective in creating and maintaining infrastructure assets than the LI approach. This is partly because of the objectives of LI type programmes (greater emphasis on employment creation than the output of the work) and partly because of the difficulty of managing and providing the technical inputs and supervision on such programmes. Retention and motivation of workers and achieving adequate productivity levels if wage rates are too low are also problems[24].

Another important difference between LB and LI is that the former offers a long-term sustainable approach to the construction, rehabilitation and maintenance of assets with the benefits of local employment creation and cost-effectiveness. The scope for the LB approach to continue to provide employment and a social safety net while improving or maintaining infrastructure assets effectively depends on the: (a) use of improved organizational and technical approaches to increase productivity, and (b) the wage rate

[21] This is often also the case for EGSs though, in principle, EGSs can encompass LB and LI activities as long as they are clearly differentiated (see section 5.2).
[22] Referred to as elite capture.
[23] We consider this in more detail in section 3.4.
[24] International evidence on labour policies and practices and their effectiveness discussed by Tajgman and de Veen (1998) confirms this.

being competitive as a result of increased productivity. The wage rate should be sufficiently high (i.e. have an "efficiency wage"[25] element) for participants to work with higher levels of productivity. It is important to emphasise that labour-based methods are able to compete with equipment based methods not because of low wages but because of a combination of efficient and well managed labour-based methods and competitive wages which provide sufficient incentive to work productively.

In most low income and many low-middle income countries wage rates for unskilled labour, even with the efficiency wage allowance, are likely to be low enough for the LB approach to contribute to the safety net objective while constructing, rehabilitating and maintaining rural roads and other infrastructure works more cheaply than equipment-based approaches. However, effective operation of an expanded LB programme crucially depends on the development of implementation capacity which has management and technical aspects. Therefore creating a sufficiently large LB programme faces technical and resource challenges. The more labour intensive approach may also be effective in asset creation and maintenance for suitable infrastructure projects and especially for smaller community projects if adequate technical support and non-labour inputs are provided.

PEPs are effective safety net instruments for households who have persons who are able to offer physical labour. However, it is possible to design projects to enable disabled or older persons to participate as these categories of people should not be excluded from participation. Alternative social protection approaches such as cash transfers may be more appropriate for these groups. If PEPs are not effective in creating or preserving assets, the cost of providing a social safety net through them could be high. While the LB approach performs a safety net function, since it is cost effective, it would be undertaken for planned infrastructure projects irrespective of the safety net function. If this is the case, the cost of providing social protection through the LB approach for planned infrastructure works would be much reduced.[26]

LI and LB approaches could both be appropriate for different types of activities. The LI approach is more appropriate for smaller village level or community projects in a locality (e.g. village roads and communal ponds) while the LB approach is required for larger rural infrastructure works (e.g. tertiary roads, small scale irrigation and flood protection) requiring more technical input. For setting the wage rate, there is a need to make a distinction between LI and LB employment. LB projects typically require a higher "efficiency wage" than LI projects because LB workers are required to work under closer supervision, to more exacting standards and achieve higher productivity[27] than workers on LI projects. International experience shows that the consequences of too low wages on LB programmes and PEPs in general are: (a) high labour turnover and absenteeism, and (b) low productivity of workers who remain on the project (Tajgman and de Veen, 1998).

Collecting and analyzing the evidence on wage rates and using it to make recommendations on PEP wage rates will be considered in later sections. We note here that a common recommendation is that the public works wage rate should be set in relation to the rural market wage rate. In practice, there is no single rural wage rate. Apart from seasonal variations, it varies depending on the type of work, working conditions, location

[25] Efficiency wage is a wage rate above the market rate paid to ensure better performance in the form of higher productivity or efficiency and reduce labour turnover.
[26] See section 8 for more explanation and discussion.
[27] On LB projects and programmes, setting given tasks and making payment conditional on completion of the task has been found to be a good way of linking pay to performance since it is relatively simple to supervise and administer (Tajgman and de Veen, 1998). Task work is also generally preferred by participants, especially if it is close to home since it enables them to combine participation with other commitments. This is an especially important consideration for women.

and the terms of work (e.g. casual or regular). As illustrated by the above discussion on LI and LB projects, this clearly has implications for wage setting depending on the features of work offered and the programme objectives. The conditions other than the wage rate required for effective operation of PEPs are addressed in section 8.

EGSs, as the term implies, offer guaranteed employment of a certain number of days a year at a given wage rate to all those who wish to take advantage of it[28]. The resources required for EGSs depend on the need for such employment to supplement household incomes and the wage rate being offered. An important attraction of EGSs is that they are self targeting. It is up to a person or a household to participate if the EGS wage rate is sufficiently attractive given the alternative livelihood opportunities and the requirement to supplement household income.

The higher the wage rate, the higher the number of persons wishing to take advantage of the EGS[29]. Therefore, in setting the wage rate there is a need to balance the provision of benefits to the poor through paid public works employment (typically short-term) on the one hand and on the other hand, the cost of the programme and the possible damaging effects on other economic activities by drawing labour away from them. However, where there is pronounced seasonality in rural economic activity with high levels of unemployment and underemployment at certain times of the year, insofar as employment guarantee (EG) jobs offered are limited and do not conflict with busy agricultural periods, the risk of disrupting other economic activities may be low even with a somewhat higher wage rate. If participants can choose when in the year to take up the EG offer, as is the case on MGNREGA in India, and the offer is of work for a limited number of days, the disruption of other activities will be low since participants will tend to choose times for EG work when disruption of other activities is mimimum. Too high a wage rate would raise programme costs and weaken the effectiveness of targeting the poorest sections of the population to the extent that low wage rates target the poor.

It is conventionally assumed that the wage rate is a highly effective instrument to target members of poor households as they are more willing to participate at low wage rates than members of better-off households. EGS employment is often rationed to a given number of days for one person per household for affordability. The need for such rationing implies that the wage rate is not the sole targeting device. However, the wage rate remains an important screening device and as long as all who wish to participate are afforded access, poor households which wish to participate will not be excluded. The targeting effectiveness will be low and programme costs high if there is participation from better off households.

The role of wage setting in targeting is an important question which needs to be addressed, especially since there is evidence that by itself, the wage rate may not be effective in targeting the poorest households. We return to this issue in section 3.

[28] Employment guarantees are often rationed to one person per household for affordability.

[29] The higher labour supply response to the higher wage rate for a given set of employment conditions is a general labour market phenomenon not just limited to EGs.

2.3 Summary: Implications for wage rates of types of programmes

In summary, the above discussion highlights the importance of recognizing the difference between different types of programmes and their implications for: (a) wage rates; (b) the balance between employment and public asset improvement, and (c) financial and other resource requirements. If the wage rate is too high (especially on large scale employment intensive programmes) the consequences are:

- fewer jobs created and therefore fewer people benefit if the budget is fixed or higher costs for employment guarantee type programmes which, in principle, have no budget limit since they are intended to provide a given level of access to public works to all those entitled;[30]
- generally less effective targeting of poor, though the effectiveness of a low wage rate by itself for targeting the poor has not been convincingly demonstrated (see Section 3 for more discussion), and
- adverse disruptive effects on other sectors, though these can be reduced if PEP activities are phased during periods when labour requirements for farming and other activities are low.

Possible implications of wage rates being too low are:

- insufficient welfare impact on participants' households, and
- low morale, high turnover and low productivity on programmes and projects, especially relevant for LB projects.

There are implications of the type of programme for the design of the study, the data to be used and the appropriate wage rate. The wage rates in comparable activities for LI activities are likely to be different from those for LB[31] activities and the appropriate wage rate for the latter is likely to be higher. Where a PEP combines LB and LI components, a differentiation in the wage rate may be required. This could be achieved by differentiating through types of projects and modes of operation, for example LB could be implemented through contractors and LI through direct labour or at the community level (see section 8 for more details).

Other considerations of relevance are the more precise programme objectives and design. These include:

- providing predictable supplementary income on a regular basis for some groups;
- providing support at times of crises;
- providing a floor for wage rates if the market wage rates are considered too low, and
- planning PEP activities to fit in with seasonal labour requirements for other productive activities.

In designing the study, it is necessary to have a clear understanding of these more detailed objectives and the scope of the programme. This can be obtained from relevant policy and programme design documents and discussions with policy makers and senior programme staff. Where the objectives are not clearly stated, it will be necessary to spell

[30] In practice, they are budget constrained and ration access to the programme in a number of ways as we will see in Section 3.

[31] EGS is not included here since the concern is with the intensity of labour, types of works and complementary inputs. An EGS could include LI and LB components.

out the options and engage in a policy dialogue to arrive at clearly formed objectives as context for the study.

This section has identified the four aspects to be investigated by wage rate and labour supply studies:

- the labour supply response to alternative wage rates for public works employment;
- the implications of PEP participation for other economic activities;
- to what extent alternative wage rates target poorer sections of the population, and
- the welfare impact of PEP earnings at alternative wage rates.

The first aspect is not simply concerned with willingness to participate for pay but also has implications for the asset creation function. The wage rate should provide sufficient incentive for those who participate to work productively under good supervision and management so that the outcome in the form of the construction or maintenance is satisfactory. Table 2.2 summarizes the implications of the aspects identified for the appraisal to be carried out and setting the wage rate. The four aspects are used to set the framework for study design in later sections.

Table 2.2: Implications of specific PEP features for study design and wage setting

Objective / design feature	Implications for study design and wage rate
Providing supplementary income on a regular basis	Appraisal to balance the objectives of welfare impact, effective asset creation, programme cost, targeting and minimizing impact on other activities.
Effective asset creation or maintenance	Appraisal of labour market conditions and wage rates to determine the appropriate wage rates for the types of activities (e.g. LI or LB).
Providing support at a time of crisis	Focus on providing short-term income support. Limited emphasis on other considerations.
Providing a floor for wage rates	Appraisal of labour market conditions and wage rates to determine whether a PEP should attempt to do this.
Planning PEP activities to fit in with seasonal labour requirements	Appraise the importance of seasonal variations in labour requirements and wage rates for PEP activities and wage setting.

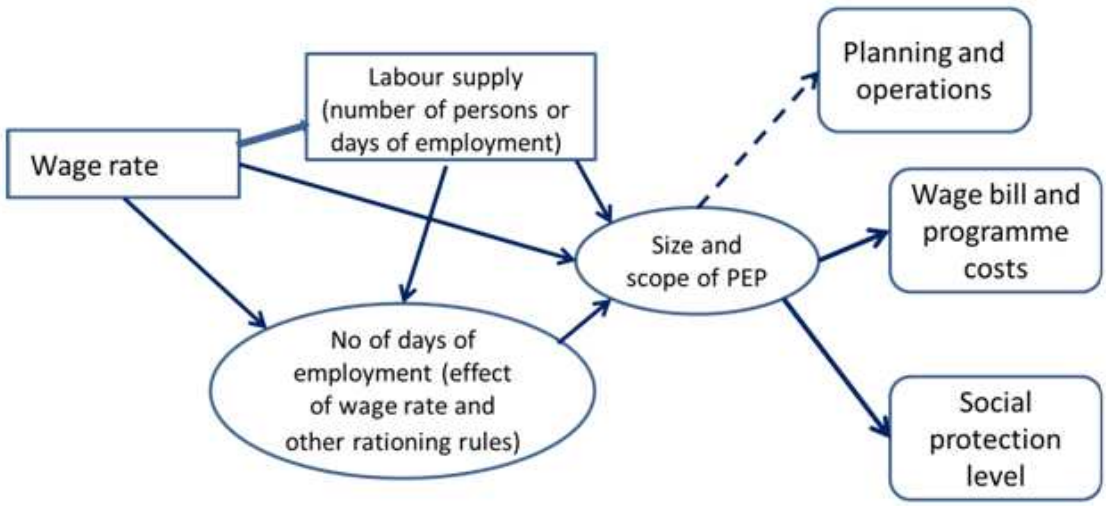
3. The PEP wage rate, labour supply and PEP objectives: Principles and issues

3.1 Introduction

This section introduces the general principles underlying the setting of wage rates for PEPs and estimating the labour supply response. We will not go into the complexities of theory but a basic understanding of principles is essential for identifying the specific questions to be addressed by the study and the data requirements, comprehending the type of analysis to be undertaken, the results required and their presentation.

We start with a basic statement of the relationship between the wage rate and the labour supply response and its implications for programme costs and the welfare impact of employment. As Figure 3.1 shows, for a given type of employment, the wage rate determines the labour supply which is the number of persons willing to work at that wage rate. This is related to the concept of the reservation wage (RW) rate which is explained further below. In general, if the levels of unemployment and underemployment are high and household incomes are low as a consequence, the higher the PEP wage rate the larger the number of persons willing to participate in it. However, the wage rate is not the only element which influences the willingness to participate in a PEP. Other important aspects are the type of employment offered, its duration, whether it is regular, predictable, guaranteed, or one-off. In addition, examination of targeting effectiveness requires categorizing participant households according to their living standards.

Figure 3.1: Wage rate, labour supply programme cost and social protection



If all those who wish to participate in a PEP are given an opportunity to participate for the number of days for which they wish to participate, the wage bill is determined by the wage rate and the labour supply. In practice, this is rarely the case. Even EGSs which are open to all those who wish to participate ration the provision of employment by limiting it to a given number of days. Further, programmes with fixed budgets rarely use the wage rate as a sole rationing device. Therefore, while the number of persons available at a given wage rate will be a response to the wage rate offered, the wage rate by itself will normally not be sufficient to limit the programme to the level affordable within the programme budget. It

will therefore be necessary to apply additional rationing rules (e.g. limiting access to one person per household) or additional selection criteria for participants.

Figure 3.1 is not intended to imply that the wage rate is the starting point in developing a PEP. It shows the links between the wage rate and programme objectives, scale and management and identifies aspects complementary to the wage rate required for effective programme design and implementation.

The arrows from the "wage rate" in Figure 3.1 to "Labour supply (number of persons or days of employment)" and "No of days of employment (effect of wage rate and other rationing rules)" conveys the relationship between the wage rate, the labour supply response to the wage rate and amount of employment offered by a PEP. The wage rate, the labour supply response and the rationing and participant selection rules and procedures affect: (a) the size and scope of the programme; (b) the wage bill and programme costs; (c) the social protection provided, and (d) the programme planning and operations requirements. The link with "Planning and operations" in Figure 3.1 is shown with a dashed arrow since this aspect is not a core aspect of this guide though implications for planning and operations are referred to where appropriate.

On social protection, our concern is not just with the number of persons wishing to participate at a given wage rate but also the type of person wishing to participate. An important aspect concerned with targeting effectiveness and welfare impact is whether more participants from poor households are targeted by lower wage rates. In addition, it is important to obtain information about the ability and willingness to participate by some categories of persons. These could be broad categories, for example participation by women and the young or more specific disadvantaged groups.

Before introducing the basic concepts and model underlying the approach to a wage rate study, we outline general characteristics of rural economic activities and how they are related to poverty incidence and their implications for labour supply response to PEPs offering paid employment.

3.2 Labour markets: Broad context, rural economic activities and definitions

The broad context for understanding rural labour market conditions is the size and growth of the labour force defined as the part of the population which is economically active, i.e. either currently engaged in an economic activity or available for such activity. If the focus is on rural programmes, our concern will be with the rural labour force and the nature of rural economic activities. There are standard definitions of what constitutes economic activity and what "available for economic activity" means. The terms and definitions are relevant for designing data collection instruments, collecting data and analyzing them as we will show in section 5.

Typically, in developing countries, population and labour force growth are relatively rapid with the higher labour force growth adding to the existing problem of unemployment and underemployment. Poverty incidence, defined as the proportion of the population for whom consumption expenditure falls below the value of a basket of goods to meet the most basic requirements,[32] has generally been in decline in most developing countries. However,

[32] Poverty incidence is also referred to as the headcount index. There are other measures such as the poverty gap and poverty severity which measure the depth of poverty which measure other dimensions of poverty but we will confine ourselves to poverty incidence in this guide.

rural poverty incidence consistently remains higher than urban and is associated with more precarious livelihoods based on either reliance on subsistence farming with limited off-farm earning opportunities or landlessness. Further, many above the poverty line have barely adequate standards of living and are vulnerable to falling into poverty, either because of events specific to a household sometimes referred to as "idiosyncratic" (e.g. loss of job or illness in the family) or a natural or economic event sometimes referred to as "covariate or systemic" (e.g. drought or a financial crisis) which affects a wider section of the population.

Rural households typically rely on a range of activities to supplement subsistence production. Crop and livestock farmers with sufficient good quality land and/or livestock are generally better off and rely mostly on farming, though some of the rural households with the best livelihoods combine farming with commercial activities or regular employment. Households with less land and/or livestock have to rely more heavily on off-farm economic activities which vary in type and relative importance between countries and localities. Members of households with no or very little land and limited skills and other assets are often among the poorest.

According to the widely accepted general ILO guidelines (see ILO, 1983), the labour force is defined as all economically active persons above a specified age (usually 14 or 15 years). An upper age limit is not recommended. Definitions used at the national level vary with respect to the lower age limit as well as the setting of the upper age limit. Economically active persons are either currently employed or unemployed. In labour force surveys, being currently employed is normally defined to include those who worked for at least one hour during the last seven days[33] as well as those who did not work in the last seven days but have a job from which they are absent (e.g. on leave or because of illness). The unemployed are defined as those who did not work in the last seven days, did not have a job and were looking for work or were waiting for the busy season. "Waiting for the busy season" is especially important for rural areas with a high degree of seasonality in farming.

The population in the relevant age range but out of the labour force comprises those who were neither employed nor unemployed (available for work and actively seeking work during the last seven days as defined in the previous paragraph). They represent those who were not economically active for a variety of reasons including attendance at an educational institution, engagement in household duties, retirement, old age or disability and "discouraged" workers. The latter include those who have withdrawn from economic activity because they see no prospect of finding any work. There is a grey area with respect to distinguishing between the unemployed available for work and actively seeking work and discouraged workers because of the problem of defining "actively seeking". Further, in the rural economy context, many may be engaged in or available for family farm work when this is required but may be discouraged from actively seeking work off the family farm because of lack of opportunities. There is reference to rural discouraged workers later in this sub-section in relation to rural labour force participation and underemployment.

The labour force participation rate refers to the number of persons in the labour force as a proportion of the total population in the labour force age group, whereas the unemployment rate refers to the per cent of the unemployed in the total labour force. The employed include those working in wage employment, non-wage employment and farming. Wage employment, or paid employment, refers to all persons performing some work for wage or salary, in cash or in kind. Non-wage employment or self-employment, refers to all

[33] This definition is used to include all who have engaged in some economic activity and may conceal substantial underemployment. The term underemployment usually refers to persons engaged in work for shorter times than they would wish to because of lack of work and is related to low incomes, underutilisation of labour and low productivity.

persons performing some work (other than farming which is identified separately) for profit or family gain, in cash or in kind. Farming refers to all persons working in agriculture, livestock, forestry or fishing.

Rural labour force participation is usually higher than urban. This is partly because a large proportion of the rural population is engaged in subsistence farming and other activities to earn a living even if the time for which they are so engaged may be limited and returns from such employment may be low. Open unemployment is low in the rural population since most of the members of the rural labour force have no option but to engage in subsistence or supplementary activities such as petty trading and seeking employment which may be on other farms or with other rural employers. Some members of households, often young, may seek work further from home, in other rural or urban locations. In addition there may be social or economic arrangements under which households agree to help each other during busy times of the year (exchanging labour) or those without land may engage in sharecropping under which they cultivate land on behalf of a landowner and share the crop with the landowner.

There are likely to be wide variations between countries and locations in the nature of the local labour markets, how active they are and in any labour sharing practices. For example, the Timor Leste study found that employment and other earning opportunities and labour market activity were very limited for subsistence farmers. The Cambodia study revealed a wide variety of rural and urban jobs at different wage rates and rural commercial activities though there were significant variations between the levels and nature of activities. Obtaining an understanding of this context is clearly important in determining the public works wage rate, assessing the labour supply response, planning the programme, and understanding the potential impact.

The low rural unemployment rate conceals high levels of underemployment and associated poor living standards as indicated by higher rural poverty incidence. Many members of the rural labour force may also be discouraged from looking for income earning work to improve their livelihoods because of limited opportunities. Here, we are referring to members of the rural labour force who are engaged in subsistence production but discouraged from seeking cash earning opportunities because of lack of such opportunities but would be available for such work if the opportunity arose. A PEP would offer such an opportunity.

Recorded male participation rates are normally higher than female. To a great extent, this may be explained by women being kept out of the labour market because of family and household commitments. Women's participation rates may also be under-reported because of their informal, intermittent and sometimes unpaid participation in the labour force. [34]

The above review outlines features of rural labour markets relevant for examining wage rate issues for PEPs. In summary, the rural economy and labour market are characterised by:

- a range of subsistence and cash earning primary activities (farming and harvesting common resources) supplemented by petty trading and wage employment locally and further afield;
- greater reliance of rural households with no or very little land, on income from unskilled wage employment;

[34] An important objective of a PEP should be to offer equal access and equal pay for work of equal value women and men. This is considered further in later sections (especially see Section 8).

- seasonality of labour requirement in farming and the need for off-farm employment in the slack agricultural season to supplement livelihoods, sometimes leading to migration in search of better livelihoods;
- varying incidence of complexity in labour transactions e.g. wage labour, exchanging labour, sharecropping and social obligations;
- greater poverty incidence than in urban areas and poverty being associated with underemployment and low productivity in primary activities and limited other livelihood opportunities rather than open unemployment, and
- vulnerability of the livelihoods of households which are not among the poorest or even average or better off households to household specific or broader economic and natural shocks.

Therefore, typically PEPs are not the sole source of livelihood for rural households; they offer additional income opportunities to supplement livelihoods. Depending on the nature of the programme, the support could be short-term to respond to natural or economic shocks or to meet long-term chronic needs. Ravaillon (2008) states that a well-designed and resourced PEP could combine addressing chronic needs and be capable of responding to crises when necessary.

3.3 Wage rate and labour supply: Identifying the reservation wage

In the context of the rural economy and livelihoods of the poorer sections of the population, PEP should be seen as offering additional short-term employment opportunities, normally during the less busy agricultural season. Therefore, a benchmark for setting the PEP wage rate would be the rural market wage rate for comparable activities. The conventional recommendation is that the PEP wage rate should be below the market wage rate. There is however often a problem of identifying a wage rate which is comparable. There will often be a range of wage rates and earnings rates from self-employment with seasonal variations. In some situations with most people engaged in subsistence production and relying on labour exchange for balancing labour requirements, wage employment may be very limited and therefore there may be insufficient evidence to determine the market wage rate for comparable activities.

One purpose of the wage rate and labour supply study is to make an assessment of the appropriate wage rate for PEP employment in the context of available information on prevailing wage rates and earnings in comparable activities. The prevailing market wage rates and earnings in comparable activities by themselves do not give an indication of the likely labour supply response to alternative PEP wage rates[35] and their implications for the scale of the unemployment and underemployment problem to be addressed. This is an important question when setting up a PEP. If an EGS is being considered, it is clearly important to know what the scale and cost of such a programme are likely to be and the welfare benefit the participants will receive. As noted earlier (see section 3.1), this will depend on the wage rate and the likely labour supply response. The estimates of scale and cost are also needed to assess affordability and based on these to make decisions on some design features of the programme, for example, limiting the number of days of participation by members of a household. If the programme is not an EGS, labour supply response at alternative wage rates is necessary to determine: (a) either the safety net and asset

[35] The most commonly used measure of the labour supply response to different wage rates is the wage elasticity of labour supply defined as the percentage change in labour supply for a 1 per cent change in the wage rate.

improvement impacts of a programme (determined by the available resources), or (b) what size of programme would be required if the objective is to make a given impact.

The approach proposed here to obtain an indication of the labour supply response is based on the reservation wage (RW) concept which is defined as the lowest wage rate at which a person will participate in a given type of employment. Each person's RW depends on the specific features of (a) the individual and his/her household (e.g. preference between the type of wage employment on offer and other activities, level of household income, the age, education, skills and previous work experience of the person), and (b) labour market conditions and available employment opportunities. For a given wage rate and a given type of employment, the labour supply would be made up of all those available for work whose RW is below the given wage rate.

The RW concept can be applied to evidence on the distribution of wage rates and earnings in activities comparable to manual public works to estimate the labour supply response to alternative wage rates and make recommendations on the PEP wage rates. The data for this analysis could be from available databases or from a dedicated survey (see section 4 for more details). There are two broad approaches to measuring the reservation wage rate at the individual level. The first is to ask individuals to state their RW. The second is to examine the evidence revealed by the employment undertaken by individuals. We refer to these as stated and revealed RWs respectively.

There are some obvious problems associated with both the approaches. The problems with the stated RW approach are that:

- the response is to a hypothetical choice which may differ from the choice that may be made in an actual situation;
- there may be an element of bargaining in stating the wage rate response;
- the respondent may not be familiar with the nature of PEP employment if such work has not been previously available, and
- the respondent may not be familiar with the wage rate in comparable work if such work is limited in the locality or the person has never had paid employment or has not had such employment for some time.

The problems with the revealed RW approach are that:

- it shows the actual wage rate but does not reveal the lowest wage rate at which employment would have been accepted;
- the revealed RW, or more precisely the upper limit of the RW (see below for explanation), is known for those who have wage employment or earnings from self-employment and it is necessary to infer the RWs (or the distribution of the RWs) for those who are not engaged in a paid economic activity[36], and
- the type of employment in which the wage rate has been earned may not be comparable with PEP employment.

In spite of the problems with each approach, either of the approaches can be used under some plausible assumptions and subject to qualifications though using both approaches to corroborate each other is preferable. We set out the two approaches below but before doing this, we note that the revealed RW approach can be undertaken with existing data and / or data from a dedicated survey while the stated RW approach will always require a dedicated survey.

[36] This category includes those who are engaged in subsistence production.

3.3.1. Stated approach

In this approach, the aim is to use evidence on the stated acceptable wage rate for a PEP from survey data to construct the distribution of reservation wages (see section 5 for discussion of data collection). The underlying assumptions are that, at least during certain times of the year, there is either a high level of underemployment or unemployment which represents an excess of labour supply over demand. The underemployed or unemployed, including discouraged workers,[37] seek employment more or less actively and that each person available for employment, whether looking for a job actively or otherwise, has a reservation wage rate. The underemployed may have some economic or non-economic commitments close to their homes (e.g. in subsistence production or household duties) which implies that they would prefer employment opportunities close to their homes. Many PEPs aim to provide employment close to the homes of participants.

Based on these assumptions, we propose that the lowest wage rate at which a person states that he/she is willing to work on a PEP is that person's reservation wage and further that the distribution of the wage rate is representative of the distribution of the wage rates in the population.[38] The problems with using the stated wage rate as evidence were identified above. The manner in which the questions on stated availability are asked to reduce these problems has been discussed in section 5 below. If there is an element of bargaining in the responses, i.e. that the stated RW is somewhat higher than the actual RW, we can reasonably assume that the stated evidence for a person gives the upper limit of the RW for that person. This assumption is also consistent with the assumption with regard to the revealed evidence (see the "Revealed approach" heading below) and therefore the distributions of revealed and stated RWs are comparable.

A difference between the revealed and stated approaches is that with high unemployment and/or underemployment rates, the number of responses, and therefore the number of observations, under the stated approach are likely to be much higher since we are likely to have stated responses from many who do not at present have cash earning employment but are available for such employment. The larger sample size is likely to increase the robustness of the estimated labour supply response.

Evidence collected from a dedicated survey makes it possible to compare the distribution of revealed and stated RWs from the survey since the survey would collect data on earnings of those who were in employment at the time of the survey. Such comparisons and comparisons with evidence from other sources, if they corroborate the findings, increase confidence in the conclusions reached. If the evidence from stated and revealed approaches is at variance with each other and with evidence from other sources, it may be possible to arrive at sound conclusions by making judicious assessment of the evidence as has been demonstrated in Section 6 (especially in 6.3.2).

The alternative is a more sophisticated econometric analysis using stated and revealed evidence to relate RWs to household and personal characteristics and to construct estimates of labour supply response based on the analysis. What has been proposed here is a pragmatic approach which provides a sound appraisal under plausible assumptions without applying econometric techniques.

[37] See section 3.2 for discussion of discouraged workers in the rural context and their availability for employment.

[38] The underlying assumption is that the sample is representative of the population and therefore the sample distribution can be considered to represent the population distribution with some degree of confidence.

3.3.2. Revealed approach

In this approach, the aim is to infer the distribution of reservation wages from survey data. The underlying assumptions about underemployment and unemployment in the labour market, more or less active seeking of income earning opportunities by the underemployed and unemployed and PEPs providing employment close to home are identical to those for the stated approach (see the stated approach sub-heading above).

Based on these assumptions, it is possible to make inferences about the distribution of the reservation wage rates of those in wage employment or other cash earning activities as well as those who are not engaged in this way. The data required to make such inferences are pay or earnings for those who were employed or engaged in income generation and the type of employment undertaken. It is assumed that for those who are in cash earning economic activities (employment or self-employment), the reservation wage rate is equal to or lower than the reported wage rate. We therefore have revealed evidence, not on the precise level of the RWs but on the upper limits of the reservation wage rates of those engaged in paid work.

With high unemployment and/or underemployment rates, those engaged in income generating activities are likely to be a relatively small proportion of the labour force age group. Some of those in the labour force age group but not in cash earning employment are not seeking employment (e.g. because they are either fully engaged in household activities, in education or are in ill health). The remainder are (a) either the unemployed or underemployed actively seeking work, or (b) discouraged members of the labour force. The latter may include those who are unemployed or, what is much more likely in the rural context, engaged in subsistence production for part of the time and therefore underemployed but discouraged from looking for additional employment. As noted above, the reservation wage rates of these members of the labour force are not revealed because they are not in cash earning employment. Here, we assume that as far as reservation wage rates are concerned, those in employment are a random selection of those in the labour force. Therefore the distribution of the RWs of those in employment is representative of the distribution of the RWs of those available for employment but not employed at the time of the survey.

An objection to the above assumption could be that those in employment are not randomly selected since employers' selections may have been based on the suitability of candidates for the work or their willingness to work for a lower wage rate. The self-employed may also have been more active in pursuing opportunities than unemployed persons. Further, some persons may remain unemployed because they set unrealistically high reservation wage rates for themselves. On the other hand, some in employment may have lowered their reservation wage rates out of desperation. Ideally, if we are relying solely on the revealed RW approach, it would be necessary to seek more supportive evidence for the assumption that the RWs, or more precisely the upper limits of the RWs of those who are in employment or self-employment are representative of those who are not.

3.4 Targeting effectiveness and welfare impact: Issues and theories

As noted earlier, one of the objectives of PEPs is provision of a safety net in the form of a cash earning opportunity for rural households. One view is that the wage rate can be used as the main if not the sole device for targeting poor households. In particular, it is argued that setting the wage rate sufficiently low would ensure that mainly members of poor households would be willing to participate. The underlying assumption is that all economically active members of poor households have lower opportunity costs of labour than all members of better-off households. Based on this supposition, for an EGS, the wage rate could be set low enough to ensure that the programme is affordable while participants

would be from the poorest households. If the programme budget is fixed, the wage rate could be set at a level which would attract just sufficient number of participants from the poorest households.

The actual situation is more complex in theory and in practice and the wage rate is rarely used as the sole targeting device. Samson et al (2010) state that the "determination of the appropriate wage rate for a public works programme is a matter of balancing the practicalities of targeting with the objectives of social protection." This statement implies that if the wage rate and the amount of employment offered are too low, the effectiveness of the safety net will be limited. In addition, a low wage rate may not attract productive workers and provide sufficient incentive to work productively and therefore jeopardize the asset creation or maintenance objective. This is especially important for LB works as noted in the previous section, but also relevant for LI works to achieve adequate levels of performance. On the other hand, if the wage rate is too high, it may draw away labour from farming and other productive activities. However, as noted earlier, high wage rates on suitably phased public works may not have seriously disruptive effects on other economic activities.

Further, if market wage rates for unskilled labour are too low and a cause of poverty for those who rely on wage employment for their livelihoods, a higher public works wage rate may provide a floor for wage rates especially if the PEP is sufficiently large or an EGS. There is evidence that the MGNREGA in India has made a significant contribution to poverty alleviation, improving food security for poor households and establishing a social floor for wage rates for unskilled agricultural workers favouring women (e.g. see Dasgupta and Sudarshan, 2011; Khera and Nayak, 2009; Ravi and Engler, 2009). Chapter 8 in Subbarao (2013) shows that on the PEP component of Rwanda's Vision 2020 Umurenge Program has contributed to increasing the low market wage rates for unskilled labour. During periods of economic or natural shocks which lead to a reduction in employment opportunities, disruption of livelihoods and fall in market wage rates, the safety net wage rate would provide a floor. Therefore in setting the safety net wage rate, it is necessary to ensure that the wage rate would provide an acceptable level of support to the vulnerable during and after crises (i.e. the welfare impact effect of a PEP).

There is some empirical evidence to support the role of the wage rate as the principal or sole targeting device. Teklu (1994) found that where the public works wage rate is increased, participation by the non-poor increased. Ravallion, Datt and Chaudhuri (1993) found that non-poor participation increased significantly after the upward revision of the wage rate on the Maharashtra Employment Guarantee Scheme (MEGS). While these studies and other similar evidence support the plausible general proposition that with higher wage rates the labour supply response will be higher and there will be a tendency for more members of better off households to participate, they do not make the case for the wage rate as the sole targeting device to ensure participation by the poor and exclusion of the non-poor.

This is not merely a theoretical issue but an important point for policy making and wage setting. If wage rate policy is based on the premise that the wage rate is a highly effective targeting device, any participation by members of non-poor households is assumed to be because the wage rate is too high or that the programme is poorly implemented. The recommendation resulting from such a conclusion on the wage rate would be to lower it to improve targeting. In practice, perfect targeting based on the wage rate is rarely achieved and the reasons for this are not simply too high wage rates or poor programme management.

There could be sound economically rational reasons for members of non-poor households to participate in public works at low wage rates and for members of poor households to hold out for higher wages (McCord, 2004, 2005 and 2012; Barrett and Clay, 2003). Based on evidence from a study of participants on FFW projects in Ethiopia, Barrett

and Clay (2003) show that the value of labour varies considerably within and between households, depending on the amount of labour available in the household and access to productive assets such as land. The Cambodia study also found that the targeting effectiveness of low wages was likely to be low. Members of poor households may face more severe time constraints and have higher opportunity costs than some members of better-off households who are willing to work for lower wages to make their contribution to the household budget. This variation in the value of labour between household members renders public works employment at a given wage attractive to surplus labour in less poor households in some cases but unattractive to poorer households with a limited number of economically active members.

While more research is needed in this area, there are clearly implications of the above discussion for the role of the wage rate as a targeting device. The wage rate may have a role in: (a) targeting the relatively poor, and (b) reducing potential adverse effects on other economic activities. However, the targeting effectiveness of the wage rate should not be overstated and its effectiveness may vary. Reduction of the wage rate to a lower level is unlikely to make significant improvements in targeting and any improvement is likely to be at the cost of reducing the welfare impact for participating households. Further the potential adverse effects on other economic activities can be avoided or reduced significantly by setting the appropriate scale and phasing of programme activities. The above discussion raises a number of issues related to the wage rate and PEP management which are considered in more detail later.

Important practical questions raised by the above discussion are: (a) the role of the wage rate in targeting the poor and vulnerable, and (b) whether and what other targeting instruments should be used. A wage rate study can contribute to addressing these questions by assessing the targeting effectiveness of the wage rate, relating labour supply response to the socio-economic characteristics of PEP participants and their households and assessing the welfare impact of the earnings from PEP participation. We return to the issue of targeting effectiveness in Section 6 (approaches to assessing effectiveness) and Section 7 (policy implications).

This section has introduced some principles and concepts relevant for the study of wage rates and labour supply for PEPs. While we have sketched out some general characteristics of the rural economy and causes of poverty and vulnerability, the actual situation varies significantly between countries and locations within them. A general appraisal of this situation based on available government and international agency documents and data and academic studies would provide an important context for designing and implementing the study. Readers are referred to sections 2 of the South Africa, Timor Leste and Cambodia studies for illustrations of general appraisals. The countries represent different characteristics. South Africa has high levels of structural unemployment, a sharp distinction between the formal and informal sectors with high wages in the former and very low earnings in the informal sector with a strong link between unemployment and underemployment and incidence of poverty. Cambodia displays the classic characteristics of a developing country rural economy with a combination of subsistence production, seasonal variations in labour requirement in farming and off-farm employment seeking. Poverty is associated with small amounts of land or no land and low pay in unskilled off-farm employment. Timor Leste is a small country with rugged terrain, very limited off-farm employment opportunities and therefore very heavy reliance on subsistence production in rural areas.

4. Investigating data requirements and availability

4.1 What this section is about

The previous two sections set the context for conducting wage rate studies. They also show that it is necessary to have an understanding of: (a) the type of PEP for which the study is being conducted, and (b) the existing economic activities, unemployment and underemployment situation and their implications for livelihoods and poverty incidence.

This and the remaining three sections provide a practical guide to undertaking studies, preparing the results and presenting them for:

- setting wage rates;
- estimating the likely labour supply response and its implications for programme costs;
- designing programmes, and
- making policies with respect to PEPs.

The purpose of this section is to assess data availability and requirements for the types of studies required and their design.

4.2 Data requirement and availability

4.2.1. Study design and type of data required

As noted earlier, wage rate studies for PEPs address four aspects:

- the labour supply response to alternative wage rates for public works employment;
- the implications of PEP participation for other economic activities;
- to what extent alternative wage rates target poorer sections of the population, and
- the welfare impact of PEP earnings at alternative wage rates.

Not all of these will be of equal importance in all studies because of differences in the issues which need to be addressed in the specific context of the PEP. The capacity to undertake studies will also vary between countries and locations. Therefore, each study will have to be designed individually to address the relevant issues given the socioeconomic and poverty situation and the types of PEP activities being envisaged. However, the four aspects that wage rate studies address are interrelated as we have demonstrated in section 3 and this will have to be recognized in the study.

Data requirements for wage rate studies are set out here followed by an appraisal to determine whether available data are sufficient to undertake the study or data will have to be collected as a part of the study. In summary, data are required on:

- household level demographics;
- household level living standards;
- each “adult” household member’s economic and essential non-economic activities such as childcare;
- indication of each “adult’s” availability for PEP employment and acceptable wage rate for such work, and
- the household’s vulnerability to crises and impacts of crises on the household.

The specific data requirements under the above headings, why they are required, how they are to be used and issues related to them have been set out in Table 4.1.

Notes explaining the data items are incorporated in the table but some introductory observations are necessary. Whether from an existing source or a dedicated survey, data will normally be from a sample of households and will include a combination of household level (demographic and living standard) and individual level (economic activity and willingness to participate in a PEP for "adult" members of households). As noted in section 3.2, the widely accepted minimum age for participation in economic activity and therefore being in the labour force age group is 15 years. No maximum age is recommended though in some countries an upper limit is specified and there are also some variations in the lower limit. In wage rate and labour supply studies, the age range of 15 years and older with no upper limit should be used, unless there are: (a) specific stipulations at the national level on the age range for the economically active;(b) the national or programme policy stipulates that the minimum age limit for participation should be higher, or (c) data availability constraints.

Some data are more difficult to collect than others. An example is data on the living standards of households. What data are collected and how they are adapted to the specific requirements will depend on what usable data already exist, time constraints and financial and human resources. In conducting such studies, a local input based on knowledge of the local circumstances and adaptation to specific conditions are essential. Further, making compromises to design and implement what is feasible in the specific context is also essential and a skill that has to be learnt and applied with the aid of this guide.

4.2.2. Choice between using existing data and dedicated collection of data

With respect to using existing data or collecting own data, there are three broad options depending on the circumstances.

Option 1: Use existing data only.

This could be from a recent household survey undertaken by a government agency or a research institute. The advantage of this approach is that the data collection effort is eliminated and therefore the resource requirements are lower. Further, sample sizes in government agency surveys tend to be large with sound sampling strategies leading to reliable datasets. In some cases, limited resources may be the overriding factor which leads to the choice of existing data. Box 4.1 gives an example of this option in South Africa where data from a general household survey conducted by Statistics South Africa were used. The total number of non-urban households in the sample was over 10,000.

There could be two main disadvantages to this option. The first is that the existing source or sources may not provide all the required data and therefore adjustments and compromises may have to be made. The second is that the approach may limit the type of analysis which can be undertaken. In many cases such data may simply not exist or its owners are protective of it and therefore this option is not open. Nevertheless, it is always important to explore what data are available since use of existing data would reduce the cost and effort of data collection.

Further, even if the available data are not precisely what is required, they may provide some comparative evidence on some aspects which is always valuable (see section 5).

Box 4.1: Labour supply study in South Africa

In this study, the terms of reference were to undertake a relatively quick study based on available data to estimate the labour supply response to alternative wage rates. The objective was to aid the assessment of the likely scale of an EGS and programme costs. The source of data was one of the General Household Surveys (GHS 2004) periodically conducted by Statistics South Africa. The revealed

reservation wage approach was developed to make use of the database. The approach is briefly described in section 6 (also see the South Africa study). In principle, GHS 2004 included data which could have been used to assess targeting and welfare impact but this was not required.

Option 2: Combine existing data with own data collection.

This option is possible if there is an existing database with suitable recent data, i.e. a large enough and representative sample to reflect the situation in the areas in which PEP activities are to be implemented[39]. Additional data on the specific aspects required for the study for the households in the existing sample would be collected through a survey (and complementary data collection methods). An advantage of this option is that it reduces the time and resources required for data collection, especially if the available data are of the type which are difficult to collect, for example on household living standards. This was the case in the Cambodia study (see Box 4.2). Another advantage is that this approach enables development of a relationship with a partner (the owner of the data) who has a good understanding of the data and may have the resources and competence to undertake the study.

This option will not be possible if a suitable database does not exist, the owner is protective of the data or there are data protection issues related to accessing the previously collected data for the sample households and including them in an additional survey and matching the data from the two surveys.

Box 4.2: Labour supply study in Cambodia

The study was conducted in collaboration with the Cambodia Development Resource Institute (CDRI). The collaboration enabled access to CDRI's Moving out of Poverty (MOPS) database which has been tracking the living standards of a sample of households over a number of years. Data on household income and expenditure of the sample households is collected periodically by CDRI. The study used a sub-sample of households in the MOPS database. The survey questionnaire did not have to include questions to assess the living standards of households since data from the MOPS database on income and expenditure and access to land could be matched with the data collected for the wage rate study.

Option 3: Conduct a survey to collect all the necessary data.

If all or some of the data for undertaking the study are not available, it will be necessary to undertake surveys and complementary collection of evidence. The Timor Leste (TL) study (see Box 4.3) is an example of this option. The advantages of this option are that the data collection can be designed and implemented to match the data requirements of the study.

A disadvantage is the higher costs and resources and time requirements. Further, while the data collection can be designed to suit the study requirements, some compromises based on what is feasible are inevitable. Another question is whether the data collection and study are to be undertaken entirely by programme staff supported by a consultant if necessary or to be contracted out in part or whole to a suitably qualified and experienced research institute or consultant. This issue is also relevant for Option 2 above and is considered in section 5 below where we address what is involved in conducting surveys and collection of complementary information.

[39] This is of course also a requirement for Option 1.

Box 4.3: Labour supply study in Timor Leste (TL)

Suitable data for the wage rate study were not available and there was no local research institute available to undertake the study. The entire study was undertaken by a short-term consultant supported by the project and ILO Office staff. For the fieldwork, a number of enumerators with previous experience of survey work and who were local to the districts in which the surveys were to be conducted were recruited. They were provided with classroom training. The testing of the questionnaire was combined with field training. No attempt was made to collect data on household expenditure but data was collected on non-monetary indicators of household living standards.

4.2.3 Detailed specification of data requirements

Table 4.1 is a comprehensive statement of the types of data required if a full study addressing all the aspects is required. [40] The specific study design and associated data collection will depend on what the study is required to deliver which in turn will be determined by the type of PEP being considered and the policy context. For example, in the South Africa study (box 4.1), the emphasis was on the labour supply response to alternative wage rates with a view to assessing the scale of a possible EGS. The study objectives did not include the targeting or welfare impact aspects. The Cambodia study (box 4.2) encompasses all four aspects (labour supply response, impact on other economic activities, targeting and welfare impact). Table 4.1, with an additional column or columns added, can be used as a checklist to plan the collection of required data, the aspects of the study it refers to, indicate the specifics of the data to be collected (where there are alternatives), how the data are to be collected and their inclusion in the survey instruments.

Table 4.2 complements Table 4.1 by summarising data requirements by each of the four aspects to be investigated. Since all studies may not require investigation of all aspects, the two tables can be used to specify the data requirements given the study requirements. The numbers in column 1 in Table 4.2 refer to the item numbers in Table 4.1. Some of the data items are alternatives and therefore not all the items specified may be required. For example, there are alternative indicators of living standards for assessing targeting effectiveness and welfare impact. They are all included in Table 4.2 but data are only required for those which are selected for a study. Where existing data are being used, the choice will be limited by what is available. Where data are to be collected as a part of the study, Section 5 outlines the options and the choices to be made.

As noted above, the aim of the situation analysis with respect to data requirement and availability is not simply to make an appraisal of the type of data required depending on the objectives but to make an appraisal of what data are available and therefore what the data collection requirements will be. The choice of option will be based on this appraisal of data availability. If it is possible to proceed with Option 1, then no data collection is required and the material in Section 5 can be by-passed[41]. Under options 2 and 3, it will be necessary to collect data on which Section 5 provides guidance and insights.

[40] Questionnaire design is addressed in section 5 supported by the Cambodia study questionnaire as an example (Annex II).
[41] Though, conduct of focus group discussions (FGDs) may be useful even under Option 1.

Table 4.1: Data requirements for a wage rate study

Data	Why needed	Definitions and issues
Household (hh) demographic data		
1. Number of persons in the hh	Needed for estimating: (a) monetary or non-monetary indicators of living standards (e.g. expenditure per head, land-person ratio), and (b) the welfare impact of PEP participation.	Defining a household (hh) – normally defined as a group of persons who commonly live together and take their meals from a common kitchen. Institutional households such as boarding houses, religious establishments with communal living and prisons are excluded.
2. Age and sex distribution of hh	Needed for: (a) estimating monetary or non-monetary indicators of living standards (e.g. expenditure per head, land-person ratio), and (b) the welfare impact of PEP participation. Needed for assessing labour force participation and availability for PEPs, total and by age and sex.	Equivalence between children and adults in estimating living standard indicators and welfare impact. For per head calculations, conventionally children under 15 are counted as half of adult equivalent. Defining labour force age group – persons 15 years or older unless there are different national stipulations or data constraints.
HH living standard related data	A number of living standard related indicators are included below. Not all of them should be used in a study. The choice depends on what strategy has been adopted depending on the context, the issues to be addressed and what is considered feasible (see section 5.4.2 for more details).	
3. Whether access to land and amount of land	To use landlessness and amount of land (per hh member) as indicators of living standards. To relate to hh members' economic activities and availability for PEPs.	Land tenure may affect living standard - land may be owned (formally or informally), rented or share-cropped. This may have implications for the standard of living and need for a safety net. Units for measuring land need attention. Units in local usage should be added in the questionnaire and information to convert to a common unit should be collected.
4. Ownership of livestock	To use ownership of livestock as an indicator of living standard. To relate to hh members' economic activities and availability for PEPs.	Most important types of livestock to be specified.

Data	Why needed	Definitions and issues
5. Size and quality of home and tenure status	To use size, quality and ownership of home as an indicator of living standard. To relate to economic activities and availability for PEPs	For quality of home, aspects such as construction materials, condition of the home and connection to services to be specified.
6. Ownership of other assets	To use ownership of assets as indicators of living standard. To relate to economic activities and availability for PEPs.	Choice of assets (either productive or household use) to be specified.
7. Food deficit or surplus	To use food deficit or surplus as an indicator of living standard. To relate to hh members' economic activities and availability for PEPs.	Subjective and therefore criticisms about reliability. This aspect and types of questions are considered further in section 5.
8. Household expenditure	To use household expenditure per head as an indicator of living standard and to compare with poverty line. To relate to hh members' economic activities and availability for PEPs.	This is a direct monetary measure of living standard which has the added advantage of being capable of comparison with other evidence on standard of living and especially poverty lines (as long as a matching basis for data collection is used) and can therefore be used to assess the effectiveness of targeting the poorer sections of the population. The difficulties are the problems of collecting data since the data required are of a higher order of complexity and accurate data are difficult to collect. It may not be feasible to collect household expenditure data for all households. The alternative would be to collect household expenditure data for a sub-sample and correlate with more easily observable non-monetary indicators. The combination of non-monetary indicators which correlate sufficiently well with household expenditure could then be included in the questionnaire to be used

Data	Why needed	Definitions and issues
		as an indicator of living standard (see section 5.4.2 for further details).
Each "adult" hh members' economic activity		
9. Economic activity in the last seven days	To obtain data on labour force participation, the types of activities undertaken and the length of time for which they are undertaken. The total length of time in economic activities provides an indication of the level of underemployment allowing for engagement in non-economic activities (e.g. caring for children and the home) and in education. To obtain an appraisal of the relationship between present economic activities (type and length) and willingness to participate in a PEP.	Collection of data compatible with labour force survey conventions. Last seven days is the conventional period used in labour force surveys and therefore would be comparable with data from other sources. It will be recall data and therefore subject to qualifications on accuracy. There are likely to be significant seasonal variations in economic activity and therefore the time of year at which the study is undertaken is important. Ideally, the study should be done during the agriculturally less busy period when PEPs are proposed. If this is not possible, questions should be included on economic activity during the less busy season and allowance should be made for seasonality. Formal and informal sector and subsistence activities to be included. At the margin, it is sometimes difficult to demarcate economic and non-economic activities, e.g. between subsistence production and household activities. Therefore the questionnaire should be designed to obtain information on different types of economic activities and non-economic commitments which limit participation in economic activities (for example, see Part 3 of the Cambodia study questionnaire in Annex II).
10. If not working during the last seven days, whether absent from normal work	To ensure that those who would normally have been economically active but were not at work during the reference period are included as members of the labour force (i.e. economically active).	This category would include those not working because of illness or leave. Note that those looking for work or attempting to start a business (self-employment) are also part of the labour force (see 14 below).

Data	Why needed	Definitions and issues
and reason for absence.		
11. Type of main place of work	To obtain a breakdown of the economically active by nature of economic activity. To relate type of work with willingness to participate in a PEP.	Provides corroboration for evidence on economic activity in the last seven days (9 above). "Looking for work and available to start work" could be included here. It could equally be included in activities during the last seven days. Corroboration is desirable but it could be excluded if length of questionnaire is an issue. Where a person has more than one types of work, the "Main" place of work could be ambiguous. This could be left to the respondent to determine based on self-perception or could be specified as the type of work in which longest time is spent or from which there is highest pay.
12. Earnings in the main activity	To obtain a distribution of market wage and earnings rates (e.g. from self-employment) – evidence for the "revealed approach" to identify the reservation wage (see section 3.3 for introduction and section 6.3 for use of the evidence and wage setting). To compare the distribution of the wage and earnings rates with the wage rates at which respondents are willing to participate in a PEP. To gauge the extent of cash economy and wage employment experience and its implications for willingness to participate in a PEP and acceptable wage rate.	While obtaining this information is very important, it is also difficult to obtain reliable information. The questions have to be constructed in such a way as to ensure that data can be converted to a standard comparable format, e.g. equivalent earnings per day when the basis of payment may be different for different respondents (piece rate, task rate, per day, per week, per month). Payment in kind should also be included with an equivalent cash value. In some countries payment may be in more than one currencies either because more than one currencies are in use within the country or payment is for migrant workers working outside the country. Some respondents may be unwilling or unable to provide precise information about pay but may be willing and able to indicate the range in which it falls. In some activities some or all payment may be in kind. If this is the case, the in kind payment should be converted to cash equivalent. Information will be required on the local prices of commodities in which payment is made.

Data	Why needed	Definitions and issues
13. Reasons for not working (in labour force age group but not economically active)	To test robustness by comparing with data from other sources (e.g. labour force and household surveys and other studies). To make a distinction between those who are economically inactive because of their age and alternative activities (e.g. domestic commitments or being engaged in education) and discouraged workers. To make an assessment of the proportion of those not currently economically active who may wish to participate in a PEP.	For those with no economic activity or absence from an economic activity for valid reasons, explanation for not working.
14. For those not in an economic activity in the past seven days, whether actively looking for work (employment or self-employment)	To make a distinction between those who are actively seeking work and therefore part of the labour force and those who may be "discouraged".	Following commonly accepted practice in labour force surveys, the questions ask for effort made during the past four weeks (and not just the reference period of the last seven days) to look for work or to start a business. Those not actively looking for work may include some who are available for work but are discouraged from actively seeking work. They would be available for work and PEP participation if the opportunities are offered. They should not be excluded from the inquiry about PEP participation (see items 19 and 20). An issue is that even those who have been economically active (e.g. for a short time), may be looking for alternative or more work and would wish to participate in a PEP. This is covered by items 19 and 20 below.
15. For those not in an economic activity in the past seven	To obtain information on past employment or self-employment experience for those not in an economic activity during the reference period.	Along with 16 to 18 below, this item provides information on how active the labour market is and on employment opportunities (or lack of them) for the young.

Data	Why needed	Definitions and issues
days, evidence on previous employment or self-employment for cash or kind	By cross-tabbing with age and sex groups, obtain information on labour market activity of the young and by sex.	
16. For those not in an economic activity in the past seven days, length of time since last employment	Combines with previous question to provide information on labour market activity.	
17. For those not in an economic activity in the past seven days, pay in the last paid activity	Combines with previous two questions to provide information on labour market activity and information on wage rates.	Issues similar to those on obtaining wage rate and earnings information in item 12.
18. Means of support if not economically active in the past seven days	To provide a check on all those who stated that they were not economically active (see 9 above). To provide information on means of support if no economic activity during last seven days.	One of the possible responses is "did odd jobs during the past seven days" (see Cambodia study questionnaire in Annex II, 3.15.1). This would reveal economic activities missed in response to the question on economic activities in the last seven days (see item 9 above). More specific data could then be collected on the nature of this work as in the Cambodia study questionnaire.

Data	Why needed	Definitions and issues
Each "adult" HH members' availability for *(additional)* work and for a PEP		
19. Willingness to accept a suitable job at acceptable pay	19 and 20 jointly provide information on availability for employment and whether this will displace present economic activities, if any.	Items 19 and 20 provide an estimate of the proportion of all "adults" who declare willingness to take up an earning opportunity if it is offered and 19 is a cross-check for the more specific question on willingness to take up PEP employment (21 below). In addition, the response to 20 addresses the issue of any possible disruptive effect on other economic activities of additional employment.
20. What will happen to current economic activities if job accepted		
21. Availability for PEP work and acceptable PEP pay	To obtain a distribution of the stated acceptable wage rate (evidence for the "stated approach" to identify the reservation wage (see section 3.3 for introduction and section 6.3 for use of the evidence and wage setting).	Up to 2 wage rates per day offered starting with the lower. If neither acceptable, respondent is asked for the lowest acceptable wage rate. See 5.4.1 for more details.
Household vulnerability to crises		
22. Household affected by any crises	To obtain evidence on vulnerability to crises and type of crises	Useful to make a distinction between incidence of household specific crises and crises from events affecting a community.
23. Methods of coping with crises	To obtain evidence on ways of coping with crises	Provides an assessment of the impact of shocks on the livelihoods of households. 22 and 23 are important for PEPs aimed at alleviating the effects of shocks.

Table 4.2: Data requirements by aspects to be investigated

Data item number (from Table 4.1)	The labour supply response to alternative wage rates	Implications for other economic activities	Targeting effectiveness	Welfare impact
1.			√	√
2.	√	√	√	√
3.	√	√	√	√
4.	√	√	√	√
5.	√		√	√
6.	√		√	√
7.	√		√	√
8.	√		√	√
9.	√	√		
10.	√	√		
11.	√	√		
12.	√	√		
13.	√	√		
14.	√	√		
15.	√	√		
16.	√	√		
17.	√	√		
18.	√	√		
19.	√	√		
20.	√	√		
21.	√			
22.			√	√
23.			√	√

5. Conducting surveys and other data collection

5.1 What this section is about

When the situation analysis is completed (sections 2, 3 and 4), we should have:

- understood the type(s) of PEP(s) for which the study is being undertaken;
- appraised the broad labour market and poverty situation in the relevant regions to obtain a broad understanding of (i) types of economic activities, (ii) prevailing wage and earnings rates, (iii) the seriousness of the unemployment and underemployment situation, and (iv) poverty incidence and its relationship with means of earning livelihoods;
- determined what questions are to be answered by the study;
- identified existing data for the study if available, and
- determined what data collection will be required.

In practice, it is not possible to completely compartmentalize the situation analysis from the designing and planning of the study and data collection. Evidently, if some or all the data required are available and identified during the situation analysis, the data collection has been in progress alongside the other elements of the situation analysis. Section 4 identifies the type of data required for the study and whether the required data are available. Where data for the required analysis are available, the material in this section is not relevant. However, in many cases required data will not be available and following the situation analysis, the decision will be made to collect data through a survey and complementary approaches (options 2 or 3 in section 4.2.2). This section provides guidance on undertaking surveys and complementary data collection (taking account of local conditions).

The two complementary methods of data collection to be used are: (a) focus group discussions (FGDs), introduced in section 5.2, and (b) sample surveys of households to collect data on selected household characteristics and on economic activity characteristics of "adult" members of households (section 5.3).

5.2 Guidance on conducting FGDs

5.2.1. Why focus groups

The purposes of focus groups for studies of this type are to provide a qualitative context and insights for (a) developing and refining the household survey questionnaire, and (b) interpreting the results of the household survey.

Since the aim of the study is to make an assessment of the appropriate wage rate and labour availability for a PEP, the FGDs should obtain a broad understanding of the importance of unskilled waged employment and other sources of cash income for households, including differences between poor, average and better off households on sources of cash income and how it is used. This would also require discussion of the characteristics which distinguish between households with different living standards. The main aspects to be discussed are:

- types and location of unskilled wage employment available and taken up by people from the village and any exchange of labour arrangements between households;
- existing wage rates and payment arrangements;

- benefit from additional income from wage employment;
- seasonality of labour requirement in farming and availability for off-farm work;
- local experience of public works employment and views about participation in public works;
- acceptable wage rates and employment conditions for public works;
- how households accommodate some members taking up wage employment and the pros and cons of employment locally and further away, and
- female participation and participation by the young in wage employment and public works.

Further elaboration of the aspects to be discussed in focus groups is provided in table 5.2. The template in the table should be reviewed to take account of the local situation (based on the situation analysis) and adapted if necessary.

The FGD topics outlined above and elaborated in Table 5.2 cover three of the four wage rate study aspects: (a) wage rate and labour supply response; (b) impact on other economic activities, and (c) impact on welfare. The fourth aspect, targeting effectiveness[42], is important. However, given the constraint on the length of FGD which should not stretch much beyond one hour, it should either be discussed briefly or separated and discussed in separate FGDs. A brief discussion in a FGD on this topic would inquire about the types of households (poor, average, better off) and persons (e.g. men vs women and youth) likely to participate in a PEP. A separate FGD would explore these aspects in more detail and also include discussion of monetary and non-monetary indicators of the standards of living of households. If the aim is to use non-monetary indicators of the standard of living and wealth ranking, this aspect should be included in the FGDs.

5.2.2. Conducting FGDs and record keeping

FGDs should be conducted / facilitated by someone with training and experience or under supervision if conducted by a less experienced person. The facilitator should have a clear understanding of the purpose and issues to be discussed and why and the discussion should preferably be conducted entirely in the language of the participants (i.e. without the use of an interpreter). Care should be taken to ensure that discussion is not dominated by a few and those who are diffident should be given an opportunity to participate.

The facilitator should be supported by a recorder to make notes on the discussion. An audio-recording device could be used for greater accuracy unless it is felt that such recording may inhibit participation. The account of the FGD should be written up, as accurately and as soon after the FGD as possible but acknowledging any gaps. It should be based on a combination of notes taken at the FGD and/or the audio-recording and recall. The account should then be used as a basis for organising the information systematically in a comparative table if appropriate with brief supplementary notes on the main topic areas (see Annex I for an example).

5.2.3. The number and locations of FGDs

The number of FGDs to be conducted and their locations are to some extent interrelated decisions. It is important to conduct a number of different FGDs to ensure that the findings from one or two FGDs are not idiosyncratic, either because of special circumstances at the locations or problems with the conduct of FGDs. Further, there may be

[42] Though the template includes some discussion of differences between poor and better off households in participation in economic activities and use of additional cash income.

differences in economic, agricultural and labour market characteristics between regions about which it is useful to gain insights. Therefore an attempt should be made to identify the main regions with different characteristics and there should be at least one FGD in each region. For example, in the Cambodia wage rate study, FGDs were conducted in four villages, one in each of the four agro-ecological zones in the country (see Table 5.1).

Table 5.1: Villages in which FGDs and household surveys were conducted (Cambodia study)

Region	Village	Summary features
Tonle Sap (Lake)	Andong Trach	Wet season rice. Fishing and related activities near lake and on rivers. Many resettled returnees from border refugee camps. 2 km from National Road 5.
Mekong Plains	Babaong	Substantial dry season rice. 14 km from Neak Loeang market town.
Plateau / Mountain	Khhan Chor	Dry season rice, some non-rice crops, substantial forest dependence and some commercial plantations. Improved road access since 2002. Low population density.
Coastal	Kompong Thnaot	Low yield wet season rice, coastal fishing and salt panning. On National Road between Kep and Kampot.

Even if the area in which the PEP is intended is relatively homogeneous, there should be at least three FGDs as a check against any idiosyncratic findings. Typically, where there are some differences in characteristics between locations, the findings will reveal some common features and some differences representing the features of the locations. Annex I reproduces the summary of findings from the Cambodia wage rate study which draws out the similarities and differences between the locations and provides information which can be used in interpreting the survey results.

5.2.4. Size of groups and representation

The size of each focus group should be between 8 to 12 persons to enable active participation by persons representing a range of household and personal characteristics. The participants should include people representing well-off households, average living standard households and poorer households, men and women and younger and older persons. The facilitator of the focus group must ensure that all participants have an opportunity to contribute and that the discussion is not dominated by a few.

If women are inhibited from participating in mixed groups in the cultural context, it may be necessary to have women only FGDs with female facilitators. This may also be the case for other groups, e.g. poorer people and minorities.

5.2.5. Length of each session

The ideal length of each FGD should not exceed an hour to ensure that there is opportunity to discuss the topics in some depth while avoiding fatigue and loss of interest but the facilitator may use discretion to stretch the discussion to 1.5 hours.

Table 5.2: Template and guidance notes for conducting FGDs

Topic	Clarification and Issues to be discussed
1. Importance of unskilled wage employment and other sources of cash income for hhs in the village	Clarification Wage employment could be any work undertaken in return for payment in cash and/or kind outside the household and family farm. It could be for another household, a commercial farm, a business, public sector employment, employment in construction work in or near the village or further away (to be adapted for local conditions). Self-employment singly or in partnership or fishing, hunting and harvesting other common resources are not waged employment. However, if they are sources of cash income, they are alternatives to wage employment and therefore have a bearing on the demand for wage employment. Issues to be discussed Main sources of cash income for hhs. Importance of wage employment vs other sources of cash income for households. This may be different for poor, average or better off households. Other differences may also be significant, e.g. hhs with no or very little land and large households may have greater need for such employment. The aim in this and other questions would be to encourage participants to come up with responses but it may also be necessary to provide prompts if responses are not forthcoming. Main uses of additional income by poor, average and better off hhs (e.g. to purchase more food, more non-food items, education, health, purchasing inputs or investment for farm or business or repaying debt). Typically, poorer households may need to spend more of the additional income on food and other essential household items and may have to repay debt while better off households may have enough income to spend on education, health and investment.
2. Types and location of unskilled waged employment taken up (currently or in the past) by people from the village.	We want to know from the direct experience and knowledge of the participants, the types of jobs which are taken up by local people within or near the village, in nearby towns, larger towns and cities further away within or outside the country.

3. Wage rates and payment arrangements	Clarification Reference here is to wage rates for unskilled labour, though if participants provide information on wage rates for semi-skilled or skilled labour; this should be noted along with the types of skills. The payment arrangements include three main aspects. The first is whether payment is made on a daily, weekly or monthly basis. The second is whether it is related to days of attendance at work or amount of work done (e.g. piece rate or task rate). Piece rate payment for amount of work done. Task rate is payment upon completion of a specified task. The third aspect is whether payment is in cash, in kind or combination of cash and kind. Participants may not know the wage rates in locations away from the village unless they have experience of such employment in the past or know someone who has. They will generally have a better idea of wage rates in the village or nearby areas. Issues to be discussed Wage rates may vary depending on the type of employment, working conditions and the time of the year. Any such variations should be brought out in the discussion and should be noted. Any differences in wage rates between men and women which may be related to differences in the type of work undertaken by men and women should also be discussed and noted.
4. Exchange of labour between hhs	Clarification Labour exchange is where hhs offer their labour to each other on mutual help basis especially during busy periods or in times of need for some households. Issues to be discussed Whether there is a tradition of labour exchange between hhs in the village or between villages, how it works (i.e. which hhs exchange labour and with whom), how widely prevalent it is, and whether it is purely on a reciprocal basis or if there is payment in cash or kind involved.

5. Seasonality in labour requirement and availability	The issue here is seasonal variations in labour requirements in agriculture and other activities (e.g. harvesting common resources) and therefore the times of the year when local people are available for wage employment and when hhs need wage employment or other sources of income. We should note the types of activities for which labour requirements are heavy and the times of the year when these activities have to be undertaken. This is relevant for understanding features of the local labour market and for scheduling any future public works based programmes.
6. Public works employment – local experience and views of participants	This topic is concerned with finding out about any current or recent experience of employment on public works projects in or near the village and participants' views on public works employment irrespective of whether they have direct experience of such employment. Therefore, contributions by FGD participants may be based on their participation in such projects or general observations. If there have been public works projects in or near the village, it would be useful to know roughly how many people or hhs from the village participated and which types of hhs benefited from participation. Whether participants were predominantly young or across the age range and whether women participated. If there have not been such projects in the area, it would be useful to know whether in the opinion of the participants, such projects would be attractive, at which times of the year and who would participate.
7. Acceptable wage rates for public works and employment conditions	This is concerned with seeking the views of participants on the appropriate wage rate for public works programmes and how it relates to wage rates and earnings in other activities. We also want to know the reasons why a particular wage rate is thought to be reasonable, especially in relation to wage rates and earnings in other activities. Whether participants prefer payment in cash or kind is another question.

8. Waged employment, opportunity cost and household burden	There are two aspects here. The first is the alternative income earning opportunities foregone by taking up waged employment and the second is the additional burden of work which may fall on the other members of the household if one member takes up wage employment. Therefore, we want to know what is being sacrificed when members of a hh take up wage employment on a public works project or other types of employment and also whether hhs have sufficient capacity to do more and therefore accommodate a hh member taking up wage employment without loss of other hh income or farm production. A related question is whether local wage employment is preferred to work further away because members of hh taking up local employment can also devote some time to other activities important for the household (also see 9 below).
9. Pros and cons of local vs employment further away.	An issue related to 8 above is whether local employment is preferable to seeking employment further away or whether higher pay further away is enough compensation for the increased burden for the remaining members of the hh. Also, whether local employment is more advantageous for some groups of people e.g. women. What is reasonable pay on a local job as opposed to one further away is a related question.
10. Female participation in waged employment and public works and participation by the young	Women should have access on an equal basis to waged public works or other employment. Therefore, the discussion should obtain understanding of whether women are willing to participate in such activities, how easy it is for them to participate and any barriers against such participation. Whether there is a problem of youth unemployment and underemployment in the village and whether public works employment would help is another topic to be discussed.

5.3 Conducting surveys: Tasks and options

If a suitable set of data for undertaking the analysis does not exist, it will be necessary to undertake a survey. The FGDs (see section 5.2) provide an input into the conduct of the survey and especially the design of the questionnaire. The tasks to be undertaken in designing and conducting a survey to fulfil the objectives established at the situation analysis stage have been set out below.

Task 1

Based on the situation analysis, establish what questions are to be answered. A checklist based on Tables 4.1 and 4.2 would be an aid.

Task 2

Determine the role of FGDs, the survey and other complementary data collection methods.

Task 3

Design and pilot test the survey questionnaire. The Cambodia study questionnaire (Annex II) is an aid

Task 4

Determine sample size and sample selection, including geographical coverage. The considerations include representation of differing local conditions, statistical confidence levels related to sample size and practical and resource considerations.

Task 5

Train enumerators.

Task 6

Plan and supervise the survey.

Task 7

Code[43] the data entry sheets using the selected software (e.g. Microsoft Excel, Stata or SPSS), entering data and cleaning[44] it.

Task 8

Summarize and analyse data. This is not part of conducting the survey and is dealt with in the next section. However we mention it here because it is essential that when planning and implementing the survey and coding and recording the data, the purposes for which data are being collected and recorded are clearly understood.

The next question to be considered is how the survey is to be conducted and by whom. As a part of the situation analysis (section 4), what resources and capacities exist to conduct the study would have been assessed. This will determine how the study is conducted as well as the scope and the nature of the study based on what is feasible. Two options are set out below.

Option 1

The first option is to collaborate with a local institute or consultant with the capacity to undertake the survey and participate in the analysis as well if the local partner has the capacity.

[43] Coding refers to how the data are recorded to enable producing summary results and conducting analysis. How the data are coded has implications for the ease and flexibility with which they can be used.

[44] Cleaning is required because almost always there are some errors, gaps and discrepancies in the data which need to be dealt with.

This option will increase the cost of the study but will have a number of advantages. The first is less effort on the part of the programme staff who may not have the specialist knowledge and contacts to organise the study and find and manage the field staff. The second is that a well-chosen local partner will have the experience of conducting the survey and the local knowledge, an invaluable input into designing the study and developing and refining the survey questionnaire. These inputs and local knowledge and contacts are of value for conducting FGDs as well. The Cambodia study is an example of this option.

Option 2

If cost considerations do not permit and / or if there is no local institute or consultant with the capacity and experience to undertake the study, the programme team guided by an international consultant if necessary, will be responsible for all the tasks. The cost of undertaking the study in this way could be lower but more effort will be required on the part of the programme staff. The scope of the study should be limited to what is feasible to do given the resources and capacities if the quality of the output is not to be compromised.

Even if Option 1 is used, to ensure that the survey and data preparation are appropriate for the objectives of the study, the programme team must collaborate with the institute in the tasks. Clearly, the programme team commissioning the study must be involved in Task 1 to specify the questions to be addressed. The checklist based on Table 4.1 will aid the programme team in producing the terms of reference and the investigation questions. The programme team should also collaborate with the partner in Task 2, i.e. in determining the combination of FGDs, household survey and other data collection methods to be employed.

On Task 3, the partner will be responsible for finalizing the issues for the FGDs and designing the survey questionnaire. However in both of these, the template and guiding principles will be the ones supplied with this guide. The role of the local partner will be to adapt them to the local conditions with approval from the programme team. Task 3 also includes pilot testing the questionnaire (and the FGDs). The field training part of enumerator training could be conducted side by side with pilot testing. The pilot testing and enumerator training will be undertaken by the partner but it is important that the programme team is involved in reviewing the results and agreeing any required amendments to the instruments.

The programme team will also be involved in Task 4. While the partner will be responsible for the technical aspects of determining the sample size and sample selection, the programme team's involvement will be required because of the need to make decisions on balancing study effectiveness and practical and financial considerations.

Tasks 6 and 7 will largely be the responsibility of the partner though some monitoring of Task 6 will be required and on Task 7, it will be necessary for the programme team to clearly communicate to the partner the form in which the data are to be supplied and the types of summary findings and analysis required. Task 8 is considered in the next section. However, if the study is undertaken with a local institute or consultant, the latter is most likely to be also involved in the analysis in collaboration with the programme team.

If the programme or project team has to undertake the study without a local partner, it will be responsible for all the tasks listed at the beginning of this section (5.3). The previous discussion indicates that the programme team commissioning the study has to be involved in a number of these tasks. The team will clearly have to take added responsibility for these tasks and, in addition, for conducting the survey. In particular, the additional tasks will be:

- Finding enumerators. Normally those with prior experience of survey work undertaken for other organizations will be available.
- Much effort will be needed in providing classroom and field training (the latter usually combined with pilot testing).

- Further the programme team will be responsible for managing enumerators and monitoring the survey process.

5.4 Designing the questionnaire

5.4.1. Labour supply response and impact on other economic activities

Questionnaire design is determined by the data to be collected which are in turn determined by the required analysis which will be related to the four aspects of wage rate and labour supply studies:

- the labour supply response to alternative wage rates for public works employment;
- the implications of PEP participation for other economic activities;
- to what extent alternative wage rates target poorer sections of the population, and
- the welfare impact of PEP earnings at alternative wage rates.

Table 4.1 sets out the data requirements for the four aspects and along with the Cambodia study questionnaire (see Annex II) provides the framework and template for questionnaire design. In designing the questionnaire, there are some areas where choices have to be made on the type of data to be collected and the level of detail required. The choices will depend on the scope of the study, i.e. whether the analysis is required to produce evidence on all four aspects or to focus on some of them. We start by setting out the core parts of the questionnaire which will be broadly similar with some local adaptations wherever the study is undertaken. The Cambodia study questionnaire (Annex II) provides the template for questions on wage rates and labour supply response, impact on economic activities and partially on the welfare impact (notably, contribution to mitigating the effects of shocks).

For targeting effectiveness in the Cambodia study, existing data for the sample households were used (see Box 4.2). The economic activity questions (items 9 to 18 in Table 4.1 and part 3 of the questionnaire in Annex II) are core because they are needed to assess the proportion of economically active persons, the nature of economic activities currently undertaken and earnings in paid employment and relate these to the need for PEP activities expressed by the stated willingness to participate.

Item 21 in Table 4.1 is required to obtain information on stated availability for a PEP and acceptable wage rate for such work. The questions regarding acceptable pay have to be constructed and asked with care and a response is required for each person 15 years old or older if 15 years is the minimum age for PEP participation. The approach proposed here is to start with a low but not totally unrealistic wage rate based on available evidence on the distribution of wage rates including from FGDs and inquire whether this would be acceptable for PEP employment (indicating the nature of the employment). If this is not acceptable, the same question should be posed with a specific higher wage rate. This should not be repeated more than twice because it might appear as if the enumerator is bargaining. If neither of the specific wage rate is acceptable the final question should be on the minimum acceptable wage rate for PEP type work. If no wage rate is acceptable for such work, an additional question could be added on why such work is not acceptable at any wage rate.

To illustrate the above, we use the Cambodia study (see questions 3.18 to 3.20 in Annex II). The first question on this subject (3.18 in Annex II) asked, for each person in the 15+ age range in the household, whether he/she was available for "manual work in road improvement, such as digging earth or hauling" if such work is offered at a wage rate equivalent to roughly $1.2 per day. If the person stated unwillingness to work for $1.2, a

further question was asked to inquire whether the person would be available at the equivalent of $2.1 per day.

While a reasonable response may be expected if the question is repeated once with a higher wage rate, i.e. $1.2 followed by $2.1, it was thought that repeating the same question with higher wage rates would introduce an element of bargaining with the respondent speculating how far the enumerator was willing to go. Therefore if the response to the question on willingness to work for $2.1 was negative, the follow-up inquiry was the minimum acceptable pay for manual work. The choice of $1.2 and $2.1 per day was partly based on evidence on distribution of rural wage rates and earnings from other sources and partly on evidence from pilot testing of the questionnaire.

A stated willingness to work at $1.2 by a member of a respondent household was taken to indicate that the stated reservation wage (RW) of the person is $1.2 or lower and if the answer is positive for $2.1, the stated RW is between $1.2 and $2.1. The open question on the wage rate at which the person would be willing to work if $2.1 was too low was intended to provide data on a subjectively stated RW above $2.1. A problem with a subjectively stated acceptable wage rate is that it may not be reflected in actual conduct. This issue was raised in section 3.3 where we noted that corroborating evidence on actual wage rates and earnings (revealed evidence) could be used to test the robustness of the findings on stated acceptable wage rates for PEP employment. In Section 6 we demonstrate how revealed and stated evidence can be used in a complementary way.

In addition, the hh demographic questions (items 1 and 2 in Table 4.1 and part 2 in Annex II) are essential for a number of reasons. They are needed to obtain estimates of: (a) the economically active proportion of the sample, and (b) the demographic characteristics of the economically active and those who state willingness to participate in a PEP at different wage rates. They are also needed for information on the size and age composition of households for assessing targeting effectiveness and welfare impact on the household of earnings from a PEP. The combination of the core items referred to above will enable estimation of the labour supply response at alternative wage rates by the stated and revealed methods.

The construction of some of the core parts of the questionnaire (notably, economic activity and stated availability) is complex and their administration in the field requires well trained enumerators working with care. However, once collected, the data and their interpretation and use are not complex. The economic activity data are generally for relatively short recall periods and do not require complex information. The stated wage data are subjective but can be corroborated with evidence from “revealed” wage and earnings rates (see section 6). If the questionnaire is limited to the core parts referred to above, it will not collect information on the standards of living of households and therefore the data will not be capable of analysis of targeting effectiveness. As noted in section 4, establishing the living standards of households is more complex. A number of alternative options for assessing the living standards of hhs of respondents are outlined in the next section.

5.4.2 Targeting effectiveness and welfare impact

Living standards of households

Why we need this information and what we need

Two of the aspects to be investigated in wage rate and labour supply studies, depending on their scope, are the extent to which low wage rates target poorer sections of the population and the welfare impact of PEP earnings at alternative wage rates (see the beginning of section 5.4.1. These two aspects are concerned with the safety net objective of PEPs, i.e. provision of income support for poor or vulnerable households.

The issues to be addressed are: (a) whether the PEP employment offered at a specified wage rate is effective in targeting the poor and vulnerable,[45] and (b) the impact of earnings from the PEP (estimated from the wage rate and the number of days of employment offered) on the standard of living. On the welfare impact of PEP employment, if it is possible to obtain a monetary measure of standard of living, e.g. household expenditure[46] per capita, it would be possible to measure the effect of earnings from PEP employment on the household. If this is not possible, we need to have an alternative approach to measuring impact, e.g. comparison of earnings from PEP participation with poverty lines or evidence on household expenditure from other sources.

Investigation of targeting and welfare impact requires evidence on the socio-economic characteristics, and especially the living standards of the potential participants' households. However, obtaining reliable information on monetary measures of living standards (expenditure per capita) is a specialist task requiring careful and detailed planning and data collection may be beyond the scope of a study of this type. In addition, what can be done will depend on the capabilities and resources available for conducting the study. Here, we set out alternative approaches to obtaining information on living standards and their pros and cons. They are broadly ordered according to their ease of use and level of sophistication starting with the simplest first. Sections 6 and 7 illustrate how information of different types on living standards can be used to address targeting effectiveness and welfare impact.

Food adequacy as an indicator of standard of living

Under this approach, the respondent would be asked how well the households' food requirements are met each year with four possible categories: 'chronic deficit', 'occasional deficit', 'break even' and 'surplus'. Another option is a simpler formulation of the question such as whether members of households have gone hungry during the past year and how frequently. Households can be put into living standard categories based on their responses (e.g. "Chronic deficit", "Occasional deficit", etc.) to assess targeting effectiveness. Since quantitative evidence on expenditure level is not collected, the quantitative impact of earnings cannot be calculated. Questions would need to be included (e.g. on how cash earnings would be used) to make a qualitative assessment of the welfare impact earnings from PEP employment.

Use of this indicator should be preceded by FGDs to: (a) check prevalence of food deficiency; (b) test whether it is appropriate to include a question on food deficiency, and (c) determine the precise form in which the question should be asked.

Pros

- ✓ A single simple to use and understandable question.
- ✓ Suitable where the capacity and resources to undertake a more advanced inquiry are limited.

[45] See section 3 for details on the role of the wage rate in targeting.

[46] Expenditure per head is preferred over income per head for a number of reasons. International evidence (Anand and Harris, 1994; World Bank, 2002) indicates that expenditure is easier to measure and conceptualise by respondents. It is also more stable than income since households smooth their consumption in the face of income variability.

- ✓ Appropriate in areas or at times where food security is an issue and food insecurity is linked to poverty.

Cons

- ✓ It is a subjective approach (based on respondents' self-perception) with all its limitations – inaccurate responses because of poor recall, biased response because of the perceived stigma associated with food insecurity and differences between respondents on perception.
- ✓ It is a qualitative and approximate indicator of living standard and therefore a quantifiable measure of welfare impact of employment cannot be obtained. However, it would be possible to include a question for a subjective response on the possible impact of earnings from PEP on the adequacy of food for the household.
- ✓ If food deprivation is widespread, the question may not distinguish between households with different standards of living.

One or more non-monetary indicators of living standard

A number of non-monetary indicators on which data can be collected readily can be used. They include indicators related to means of livelihood or evidence of living standard. Examples of indicators related to means of livelihood are: (a) ownership or access to land and the amount of land; (b) ownership of livestock; (c) ownership of farm or transport equipment (though the latter could be evidence of standard of living as well), and (d) off-farm employment or business. Examples of evidence of living standard are: (a) size and construction of house and whether owned, and (b) ownership of durable assets (including type of transport).

As for food security, FGDs are needed to identify the most important aspects to be included but the choice derived would be subjective though based on a group consensus rather than individual perception. FGDs could also be used to rank and even weight the relative aspects.

A simple approach to putting households into living standard categories for examining targeting would be based on ownership of (or access to) combinations of assets. A more sophisticated approach would be to use a statistical method (e.g. factor analysis or multiple correspondence analysis) to determine weights for the indicators and categorize households in living standard categories according to such a scale. Since neither the basic nor the statistical approach produces a monetary measure of standard of living such as household expenditure per head, Questions would need to be included (e.g. on how cash earnings would be used) to make a qualitative assessment of the welfare impact earnings from PEP employment, questions to make a qualitative assessment of the welfare impact earnings from PEP employment would be needed as for the food sufficiency approach (see above).

Pros

- ✓ The evidence is generally objective and verifiable and therefore the subjectivity associated with self-perception on food sufficiency is less of an issue.
- ✓ It is appropriate where resources and capacity for survey and analysis are not sufficient for obtaining data on household expenditure.
- ✓ It may be more appropriate where overall living standards are somewhat higher.

Cons

- ✓ It is difficult to decide which indicator(s) to use and how to weight and combine them, especially since there are different types of indicators, some providing evidence on means of livelihood and others of living standard[47].
- ✓ As there is no monetary indicator, there is the same issue in measuring impact of PEP earnings on a household as with food security.

One or more non-monetary indicators of living standard linked to a monetary indicator

This approach requires collection of data on non-monetary indicators from the household survey in the same way as the previous approach. In addition, for a smaller sample of households, a detailed expenditure survey is undertaken. Statistical analysis is then undertaken on the data from the small sample for which non-monetary and monetary data have been collected to estimate the relationship between the monetary indicator and the non-monetary indicators. The estimated relationship is then used to put the households in the full survey into living standard categories based on estimated household expenditure per head.

FGDs are invaluable in arriving at the list of non-monetary indicators of living standards. The quality of the results depend on the outcome of the statistical estimation which is based on the hypothesis that a close and statistically significant fit can be established between a selection of non-monetary indicators and the chosen monetary indicator. Even if the fit is good, it is unlikely to be perfect and therefore there will be some errors in putting households in expenditure categories.

Pros

- ✓ This approach provides an estimate of a conventional monetary indicator of living standard (expenditure per head) backed by the relationship with non-monetary indicators.
- ✓ The monetary indicator can be compared with available measures of poverty (e.g. poverty lines) and the welfare impact of earnings from PEP employment can be measured in monetary terms as a proportion of estimated household expenditure.

Cons

- ✓ The approach requires capacity and additional effort to undertake the smaller household expenditure survey. Such surveys are difficult to undertake and subject to errors even when undertaken by specialist personnel and the results are subject to inaccuracies, especially if they are based on the recall method (i.e. respondents providing information on expenditure from memory).

- ✓ Technical capacity and software are required to undertake the statistical analysis (multiple regressions).

[47] There are also important and fundamental health, nutrition and education indicators of welfare. However, data on some of these indicators (e.g. weight of children and nutritional deficiencies) are difficult to collect in an economic activity oriented household survey. Information on whether children attend school and whether household members can afford to attend health clinics can be collected but both these indicators do not just depend on the households' ability to pay for using these facilities but also their local availability.

Obtaining or using data on household expenditure per head

Both for assessing targeting effectiveness and welfare impact, information on household expenditure per head is required. The alternative approaches above have been proposed because, as noted earlier, obtaining evidence on income and expenditure of the households of those wishing to participate in PEP from a wage rate survey increases the complexity of the task. Obtaining reliable income and expenditure data is generally more difficult and requires more interview time with households and repeat visits or other approaches such as asking the household to keep a diary of expenditure over a period of time.

One option is to select a sample of households for whom such data are available. As noted in section 4 and in the earlier discussion of tasks and options in section 5.3, in the Cambodia study collaboration with CDRI and selection of a sub-sample of households from the MOPS database made it possible to match data on income and expenditure for households with data collected for the wage rate study.

Pros

- ✓ This approach provides information on the conventional monetary indicator of living standard (expenditure per head).
- ✓ The monetary indicator can be compared with available measures of poverty (e.g. poverty lines) and the welfare impact of earnings from PEP employment can be measured in monetary terms as a proportion of household expenditure.

Cons

- ✓ A household survey including household expenditure questions requires the capacity, resources and additional effort to household expenditure survey.

- ✓ The data obtained are subject to errors even when undertaken by specialist personnel and the results are subject to inaccuracies, especially if they are based on the recall method (i.e. respondents providing information on expenditure from memory).

6. Data presentation and analysis

6.1 What this section is about

As we have noted in section 4, the data may come from an existing source or from a survey undertaken as part of the study. There are two main aspects of the data presentation and analysis. Section 6.2 deals with presenting the descriptive summary statistics. Its purposes are to: (a) describe the general situation depicted by the data, and (b) compare it with the general labour market, economic activity and poverty situation in the country or the region. The description and comparison are necessary to confirm, at least in general, that the data to be used are robust enough for the analysis.

Section 6.3 shows how to analyse the data to address the four aspects of wage rate studies:

- the labour supply response to alternative wage rates for public works employment;
- the implications of PEP participation for other economic activities;
- to what extent alternative wage rates target poorer sections of the population, and
- the welfare impact of PEP earnings at alternative wage rates.

The data requirements for the four aspects of the study and approaches to data collection have been outlined in the previous two sections. The coded data, whether from an existing source or collected as a part of the study, may be in a number of forms. They could be in a statistical package such as SPSS or Stata or database software such as Microsoft Access or even in Microsoft Excel. The data set should contain matching household level and person level data for members of households 15 years old or older. Normally the analysis requires merging of household level and person level data. The type of processing and analysis required are principally tabulation and cross-tabulation of data and can be undertaken in any of the above software though Microsoft Excel is less flexible and cannot deal easily with large data sets. Familiarity with the software used and especially the ability to handle data within it are essential requirements.

6.2 Descriptive summary of data and testing robustness

Whether the data are obtained from an existing database or collected for the study, we need to provide a general descriptive summary to compare with the broad economic, labour market and poverty situation. For example, in the Cambodia study the summary data on the demographic and economic characteristics included the following:

- average household size and household size distribution by region;
- age and sex structure of households;
- proportions of male and female headed households;
- agricultural land per person available to sample households and proportion of landless households;
- types of economic activities by sector, and
- earnings in paid economic activities.

To provide a reliability check, the summary data for the study sample in the Cambodia study were compared with information obtained from available sources on employment by sector (from a recent population census), daily average earnings of vulnerable workers

(from surveys conducted by a research institute) and on national poverty lines (from a World Bank study based on evidence collected by the National Institute of Statistics). Other information on levels of economic activity, unemployment and underemployment used in conducting the labour market and poverty situation analysis (see section 3) at the national level was from Cambodia Socioeconomic Surveys and an analysis of the unemployment and underemployment situation undertaken on behalf of the ILO (Morris, 2007). The comparison confirmed that our sample is broadly representative of the national and regional situation on these features.

The descriptive presentation can also be used to make more specific checks. For example in the South Africa study, evidence from General Household Survey (GHS) 2004 was used to explore the present economic activities of those who would be willing to take up a job if it was offered. Over 86 per cent of those who were willing to take up a job if offered were currently unemployed. This gives insights into the nature of the problem (greater prevalence of open unemployment in South Africa) and supports the assumptions underlying our approach to estimating the distribution of RWs (see section 3.3).

If there are differences between summary survey data and those from other sources, we need to have plausible explanations for the difference and make allowances for the differences when using and interpreting the survey data.

6.3 Data analysis: Labour supply response

6.3.1. Labour supply response using existing data (revealed evidence)

With the revealed approach, the distribution of reservation wages is inferred from data on earnings. For those who were in paid employment or self-employment, the reservation wage rate or earnings has been revealed to be equal to or lower than the wage rate at which the person was working. We therefore have revealed evidence on the upper limits of the reservation wage rates or earnings rates of those in employment or self-employment. A complicating issue could be the interpretation of the RW for those who worked for only part of the time during the reference period. If the reason for working part of the time for most in this category is not enough work (evidence of underemployment), it can be reasonably assumed that the actual wage rate is the upper limit of the RW as for the fulltime employed [48].

According to conventional definitions, the unemployed, defined as those who were not in any employment or self-employment during the reference period but had made some effort to seek employment or start a business during the reference period (see section 3.2 and Table 4.1), are economically active and part of the labour force. If off-farm work opportunities are limited, “discouraged workers” may have ceased looking for work and therefore would be excluded from the labour force according to the conventional definition of economic activity (see section 3.2). However, as noted in section 3.3 and Table 4.1, “discouraged workers” are likely to become economically active if sufficiently attractive work opportunities become available. Therefore, a PEP project in close proximity would induce some discouraged workers to become economically active.

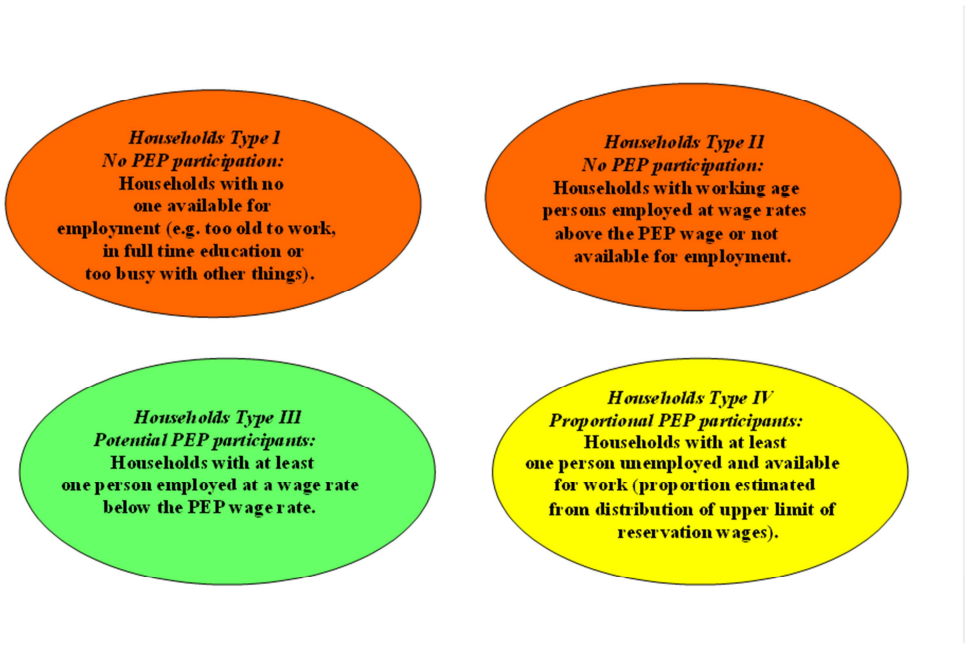
[48] Based on the reasonable assumption that such workers are involuntarily underemployed and would work more at the same wage rate if the opportunity was available.

It is assumed that each unemployed person seeking employment more or less actively and each discouraged worker not actively seeking work, has a reservation wage rate. The inference is made that the distribution of the reservation wage rates of the unemployed is identical to the distribution of the reservation wage (RW) rates of those who are in cash earning employment. The assumptions underlying this inference have been set out and discussed in section 3. However, the approach proposed here and described below does not require information about the precise RW of each potential participant.

Based on the above assumptions, the approach estimates the labour supply response by analyzing the database to identify the number of persons who are likely to participate in a PEP at a range of wage rates under two alternative assumptions: (a) PEP participation is restricted to one person per household, and (b) the number of participants per household is not restricted. A distinction is made between two types of potential PEP participants, those who are currently employed at a wage rate below a given PEP wage rate and those who are unemployed and available for work. It is assumed that the former will switch to PEP employment because of the higher wage rate. Sensitivity analysis is undertaken to estimate the labour supply response when only a proportion of those with current wage rate below a given PEP wage rate (for example only those in casual or short-term employment) switch to PEP employment while those in longer term regular employment at a wage rate below the given wage rate may prefer to remain in this employment and not switch to the PEP offering employment of short duration.

To relate the two types of potential participants to employment related characteristics of households, four types of households have been identified with respect to their labour supply response to PEP (Figure 6.1). The response to PEP of the four types of households is summarized below under the two alternative assumptions that PEP employment would be (a) restricted to 1 person per household, and (b) all persons wishing to participate would be provided PEP employment.[49]

Figure 6.1: Household characteristics and labour supply response to a PEP



[49] A limitation of this approach is that it is based on the household level and does not take account of the individual level characteristics which influence the willingness to accept PEP work.

Labour supply: One per household restriction

For labour supply response restricted to 1 per household, PEP employment by household type can be identified by using the following criteria for interrogating the database.

Household type I

Households with no one available for employment (e.g. too old or disabled to work, in full time education or too busy with household and other activities to undertake paid employment).

Labour supply response: None

Assumptions: Household members do not switch from full time education or household and other activities to take up PEP employment. Household members do not include "discouraged workers"[50].

Household type II

Households with working age persons either employed at wage rates above the given PEP wage rate[51] or not available for employment (e.g. too old or disabled to work, in full time education or too busy with household and other activities to undertake paid employment)

Labour supply response: None

Assumptions: Household members do not switch from other paid employment (because of higher pay in comparable or preferable work), full time education or household and other activities to take up PEP employment. Household members do not include "discouraged workers". It is possible that some persons in work at higher pay may prefer PEP work at a lower wage rate if PEP work is preferable and/or closer to home. If this is the case, the labour supply response at a given wage rate may be underestimated.

Household type III

Households with at least one person employed at a wage rate below the given PEP wage rate.

Labour supply response: One PEP participant per household (restricted to one per household case).

[50] "Discouraged workers" are assumed to be available for work if it becomes available (see the preceding discussion in this section, sections 3.2 and 3.3 and Table 4.1 in this guide and section 4.3 in Vaidya and Ahmed, 2007). They are persons who have not been actively seeking work but are available for work if it is offered.

[51] This exercise is conducted for a range of alternative wage rates. Therefore, a person not included in the labour supply response at a lower wage rate may be included at a higher wage rate. In the South Africa study using data from 2004 General Household Survey (GHS) conducted by Statistics South Africa (see Vaidya and Ahmed, 2007), the wage rates ranged between about $2.2 to $10.5 per day at the exchange rate at the time).

Assumptions: Either the person employed at the lower than given PEP wage rate switches to PEP employment or another person in the household who is currently unemployed and available for work takes up PEP employment. Sensitivity analysis to be undertaken to assess the effects of less than 100 per cent switching to PEP by those employed at below the given PEP wage rate.

Household type IV

Households with no one employed at below the given PEP wage rate or there is no indication of the minimum acceptable wage rate (e.g. no response received during the survey) but at least one person unemployed and available for work.

Labour supply response: One PEP participant from a proportion of households (restricted case, therefore one per household).

Assumption: The proportion and number of participants available for PEP work at a given PEP wage rate is estimated by comparing the distribution of the upper limit of the reservation wage rate (derived from the data) with the given PEP wage rate.

Labour supply: No restriction on number of participants per household

Labour supply response to PEP employment by household type not restricted to one person per household can be identified by the following criteria using the database.

Household types I & II

Labour supply response: None (as in the one per household restricted case).

Assumptions: The restricted case assumptions apply.

Household type III

Households with at least one person employed at a wage rate below the given PEP wage rate.

Labour supply response: All persons employed at a wage rate below the given PEP wage rate. Proportion of all persons unemployed and available for work.

Assumptions:

All persons employed at lower than given PEP wage rate switch to PEP employment. Sensitivity analysis to assess the effects of less than 100 per cent switching to PEP by those employed at below the given PEP wage rate.

For the unemployed and available in Type III households, the proportional labour supply response is estimated by comparing the distribution of the upper limit of the reservation wage rate (derived from the database) with the given PEP wage rate (as for the household Type IV under the restricted and unrestricted cases).

Household type IV

Households with no one employed at below the given PEP wage rate or there is no indication of the minimum acceptable wage rate of the household but at least one person unemployed and available for work.

Labour supply response: Proportion of all persons unemployed and available for work.

Assumption: The proportion and number of participants available for PEP work at a given PEP wage rate is estimated by comparing the distribution of the upper limit of the reservation wage rate (derived from the data) with the given PEP wage rate but with the one per household restriction removed.

In practice, labour supply responses for the unrestricted cases can be estimated by computing the average number of available persons per Type III and IV households and the number of Type III and IV households estimated for the one per household case.

Table 6.1 shows the estimated labour supply response and the wage bill for one of the provinces from the South Africa study under two assumptions: (a) access to PEP restricted to one person per household, and (b) 100 per cent of all currently employed at below the given wage rate would switch to the PEP. For example if a PEP offered the monthly wage rate equivalent to $92.3 per month at 2004 prices, $4.5 per month at 2006 prices, all those employed at the current wage rate below this level would switch to PEP employment. The Excel based model developed in the study made it possible to estimate labour supply response under alternative assumptions (i.e. with access to PEP not restricted to one per household and alternative assumptions about the per cent of persons with wage rate below the given wage rate switching to the PEP). The table shows the wage elasticity[52] of labour supply which is high at the lower wage rates but diminishes at the higher levels as the proportion of persons with higher RWs is lower. The wage bill which indicates the size of the programme is shown under alternative assumptions on the number of days of employment offered. The actual programme costs would be significantly higher since non-labour costs are not included. The Excel template provided with this guide (see section 7) includes provision for estimating total programme costs (i.e. labour and non-labour costs).

Table 6.1: Summary table of labour supply response for Limpopo Province, South Africa (restricted to one person per household)

Labour supply estimate for:		**Limpopo Province, South Africa**				
Assumptions						
Participation per household (HH) Restricted / unrestricted		**1 Person per HH**	**Proportion of currently employed switching:**		**100%**	
Monthly wage rate, $ equivalent (2004 prices)	**Daily wage rate, $ equivalent (2004 prices)**	**Labour Supply (number of persons)**	**Equivalent daily wage rate at 2006 prices ($ equivalent)**	**Elasticity (% change in labour supply response / % change in the wage rate)**	**Wage bill (Million $) - Ass 1 (a)**	**Wage bill (Million $) - Ass 2 (b)**
46.2	2.1	403,048	2.3		73	91
61.5	2.8	613,568	3.0	1.45	148	184
92.3	4.2	877,307	4.5	0.88	316	395
123.1	5.6	1,093,839	6.0	0.77	525	656
153.8	7.0	1,160,824	7.5	0.27	696	870
184.6	8.4	1,236,658	9.0	0.35	891	1,114
215.4	9.8	1,269,469	10.5	0.17	1,067	1,333

[52] This is the most commonly used measure of labour supply response defined in a footnote in section 3.3 as the percentage change in labour supply for a 1 per cent change in the wage rate.

(a) Ass 1 - 80 days of work offered by EPWP

(b) Ass 2 - 100 days of work offered by EPWP

Exchange rate: US$1 = 7.15 ZAR (at the time of the study)

Source: Vaidya and Ahmed (2007) (the South Africa study)

6.3.2. Labour supply response from dedicated survey (stated and revealed evidence)

The procedure for estimating the labour supply response from stated evidence is simpler since it is not necessary to infer the labour supply response but to simply tabulate the data from stated responses. The labour supply for a given wage rate is the total number of persons who are available for employment at that and lower wage rates. The procedure and qualifications are illustrated here with the help of evidence from the Cambodia study. Tables 6.2 (column 6) shows the stated labour supply as a proportion of the total number of persons in the 15+ age range.

According to Table 6.2, in total 1074 persons (i.e. 51 per cent of the labour force and 46 per cent of those 15 years or older in the households[53] in the survey sample) stated that they would be available for public works employment at some wage rate. At least one person from 437 out of 600 households (73 per cent) indicated availability for public works employment. The remaining 163 households (27 per cent) had no members willing to participate. It cannot be assumed all these households do not wish to participate because they are sufficiently well off. Some of them may have need for additional cash income but may not have members who are able to participate in public works. As noted in sections 2.2 and 6.3.1, public works participation may not be a suitable safety net for all. From the 437 participating households on average 2.3 persons per household are available for public works. The table shows that if there is no limit on the number of participants from a household, for 11.5 per cent of those indicating availability for public works at some wage rate, $1.2 would be acceptable while for a further 12.9 per cent, $2.1 would be acceptable and so on. The wage rate at which a person states that he/she is willing to take up employment is the stated reservation wage (RW).[54] Column 7, which shows availability for public works as per cent of persons in the 15+ age range, is the labour supply response for the sample at a given wage rate as per cent of the 15+ population.[55]

[53] The differences in percentages is explained by about 10 per cent of those in the labour force age group (i.e. persons 15 years or older) claiming to be economically inactive. However, some persons in this category did indicate willingness to participate in a PEP in response to the survey.

[54] Or the upper limit of the person's RW if there is an element of bargaining in the stated RW.

[55] Strictly speaking, the labour supply should be represented as a proportion of the economically active. It has been represented here as the proportion of the total population in the 15+ age group because some persons who were not economically active have indicated willingness to participate in public works. The results in the table are for a sample of households. Their broader applicability should be qualified by estimating confidence intervals. Indeed, when designing the study, the sample size and selection should ensure that the sample estimates can be relied on as being representative of the population within reasonable margins of error.

Table 6.2: Acceptable wage rates for public works, all respondents

(1) Minimum acceptable pay for public works ($ equivalent per day)	(2) Number of respon-dents	(3) % of respondents "available" for public works	(4) Cum numbers "available" for public works	(5) Cum % "available" for public works	(6) Cum % of economically active available for public works	(7) Cum % of all in 15+ age range in sample households	(8) Average supply elasticity
$1.2	124	11.5	124	11.5	5.9	5.3	
$2.1	139	12.9	263	24.5	12.5	11.3	1.26
$2.4	202	18.8	465	43.3	22.2	19.9	5.27
$2.8	258	24.0	723	67.3	34.5	31.0	2.39
$3.6	259	24.1	982	91.4	46.9	42.1	1.37
$4.7	85	7.9	1067	99.3	50.9	45.7	0.29
$5.9	5	0.5	1072	99.8	51.1	45.9	0.02
$7.1	2	0.2	1074	100.0	51.2	46.0	0.01
Total	1074						
Total labour force in sample	2096						
Total population 15+ years in sample	2333						

Source: Adapted from the Cambodia Study, Vaidya (2010).

The evidence on labour supply response has also been used to estimate average labour supply elasticities[56] . The supply elasticity of nearly 5.3 for an increase in the wage rate from $2.1 to $2.4 indicates that a 10 per cent increase in the wage rate would lead to a more than 50 per cent increase in the labour supply. The high elasticity demonstrates a strong demand for employment in response to a relatively small increase in the wage rate. The high elasticity implies that at the higher wage rate the wage bill would be higher if all those available to work are employed. The supply elasticity is also high for an increase in the wage rate between $2.4 and $2.8. Above $2.8, the labour supply response diminishes as the number of respondents in the sample with stated wage rates for public works employment higher than $2.8 is small and we also have wage rates which are well above comparable market wage rates.

A problem with stated intentions is that response to actual employment opportunities may be different from response to hypothetical questions (see section 3.3). Table 4.1 and section 5.4 outline approaches for dealing with this problem. Nevertheless, it is important to obtain corroborating evidence which may be from the findings of the survey or other sources. An important source from survey findings is the evidence provided by respondents

[56] Defined earlier as (% change in labour supply)/(% change in the wage rate).

on earnings. This can be interpreted as the revealed labour supply response (see section 6.3.1). In the Cambodia study, the initial comparison of stated and revealed evidence led to the following observations:

- the total number of persons engaged in waged employment or cash earning self-employment was much smaller than those stating availability for a PEP;
- in one of the locations, the incidence of cash earning employment was much lower;
- in the location with very low cash earning employment, the stated wage rates for a PEP were higher than revealed earnings and stated wage rates elsewhere possibly because the latter were based on insufficient local evidence, and
- the predominant types of cash earning work was unskilled and therefore comparable with PEP work.

Based on the above observations on the evidence from the Cambodia study, the following estimates of labour supply response were compared:

- the unadjusted stated labour availability at specified wage rates ("Stated – all locations" in Table 6.3);
- the stated labour availability at specified wage rates adjusted by taking out observations from the location with low cash earning and high stated wage rates ("Stated – 'unrealistic' locations taken out" in Table 6.3;
- the revealed labour supply response based on actual earnings rates reported by survey respondents (since comparison of stated intentions with actual earnings would provide a better insight into the labour supply response and a more reliable basis for estimating the labour supply response) ("Distribution of cash earnings" in Table 6.3);
- the revealed labour supply scaled up proportionally to be comparable with the number who stated they would be available for PEP work ("Distribution of cash earnings – scaled up for comparison" in Table 6.3).

The last adjustment above (d) was made to make a comparison between the distribution of revealed and stated RWs. The total number of persons engaged in cash earnings in the study sample being smaller than those who stated availability for public works employment at some wage rate indicates that the number of persons who would wish to be engaged in cash earning is constrained by availability of opportunities rather than supply of labour[57]. If the distribution of RWs of those with cash earnings is comparable with the RWs of the economically active who are available for paid employment but do not have such employment, the stated approach could be considered to be robust.

Table 6.2 shows the four alternative labour supply responses and Figure 6.2 shows the comparison graphically. The shapes of the labour supply curves are broadly similar and the curves remain close to each other with the exception of "Earnings distribution" which diverges sharply from the stated labour supply curves above $2.4. The divergence could be explained by a shortage of higher paying employment and earning opportunities.

Closer examination shows that while the shapes of the curves are broadly similar, there are differences in the labour supply response indicated by the evidence at the wage rate of $2.4 ranging between 19.9 per cent of the population in the 15+ age range for "Stated – all locations" and 31.2 per cent for "Earnings distribution scaled up". "The Stated – unrealistic locations excluded" and "Earnings distribution" are close to each other at this wage rate. Therefore, it seems reasonable to use "Stated – unrealistic taken out" as the central assumption for estimating the labour supply response and the wage bill with

[57] This assumption underlies the approach proposed in this guide.

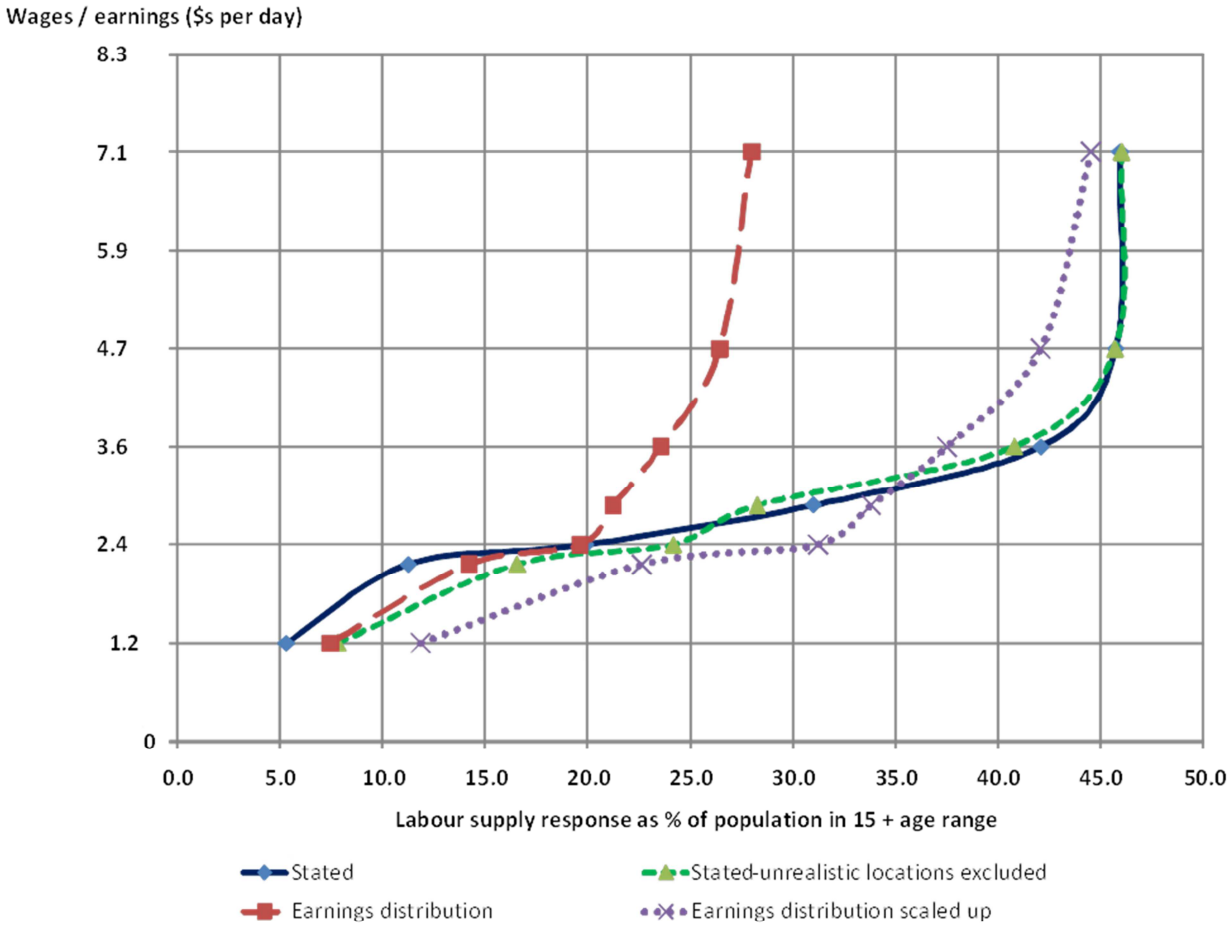
"Earnings distribution scaled up" providing a high labour supply estimate at lower wage rates. Thus the Cambodia study demonstrates the use of stated and revealed evidence to corroborate the findings and produce estimates of labour supply response to alternative which can be used to estimate the programme wage bill and overall costs (see Section 7).

Table 6.3: Labour supply response - all respondents - alternative assumptions

	Stated - all locations		Stated - "unrealistic" locations taken out Central Assumption			Distribution of cash earnings		Distribution of cash earnings - scaled up for comparison High assumption	
Minimum acceptable pay for public works ($ equivalent per day)	Number of respondents	Cum % of all in 15+ age range in sample households	Number of respondents	Number of respondents scaled up	Cum % of all in 15+ age range in sample households	Number of respondents	Cum % of all in 15+ age range in sample households	Number of respondents scaled up	Cum % of all in 15+ age range in sample households
$1.2	124	5.3	124	182	7.8	174	7.5	277	11.9
$2.1	263	11.3	263	386	16.6	332	14.2	528	22.6
$2.4	465	19.9	384	564	24.2	458	19.6	729	31.2
$2.8	723	31.0	449	660	28.3	496	21.3	789	33.8
$3.6	982	42.1	648	952	40.8	550	23.6	875	37.5
$4.7	1067	45.7	726	1067	45.7	617	26.4	982	42.1
$5.9	1072	45.9	731	1074	46.0	653	28.0	1039	44.5
$5.9+	1074	46.0	731	1074	46.0	675	28.9	1074	46.0
Total population 15+ years in sample	2333								

Source: Adapted from the Cambodia Study, Vaidya (2010).

Figure 6.2: Labour supply response, stated and revealed



Source: The Cambodia Study, Vaidya (2010).

Labour supply response if access to public works is limited to one person per household was also estimated in the Cambodia study[58]. As Table 6.4 shows, of the 600 households in the sample, at least one person was willing to participate from 437 households (i.e. about 73 per cent of all sample households) and the rate of participation of households at each wage rate level is higher than the rate of participation by individuals. As expected, Figure 6.3 shows that the labour supply response restricted to one per household is lower than the unrestricted labour supply response at each wage rate. The "one per household" restriction limits the labour supply response under the one per household restriction to just under 19 per cent of the population. This clearly has implications for the wage bill and programme costs.

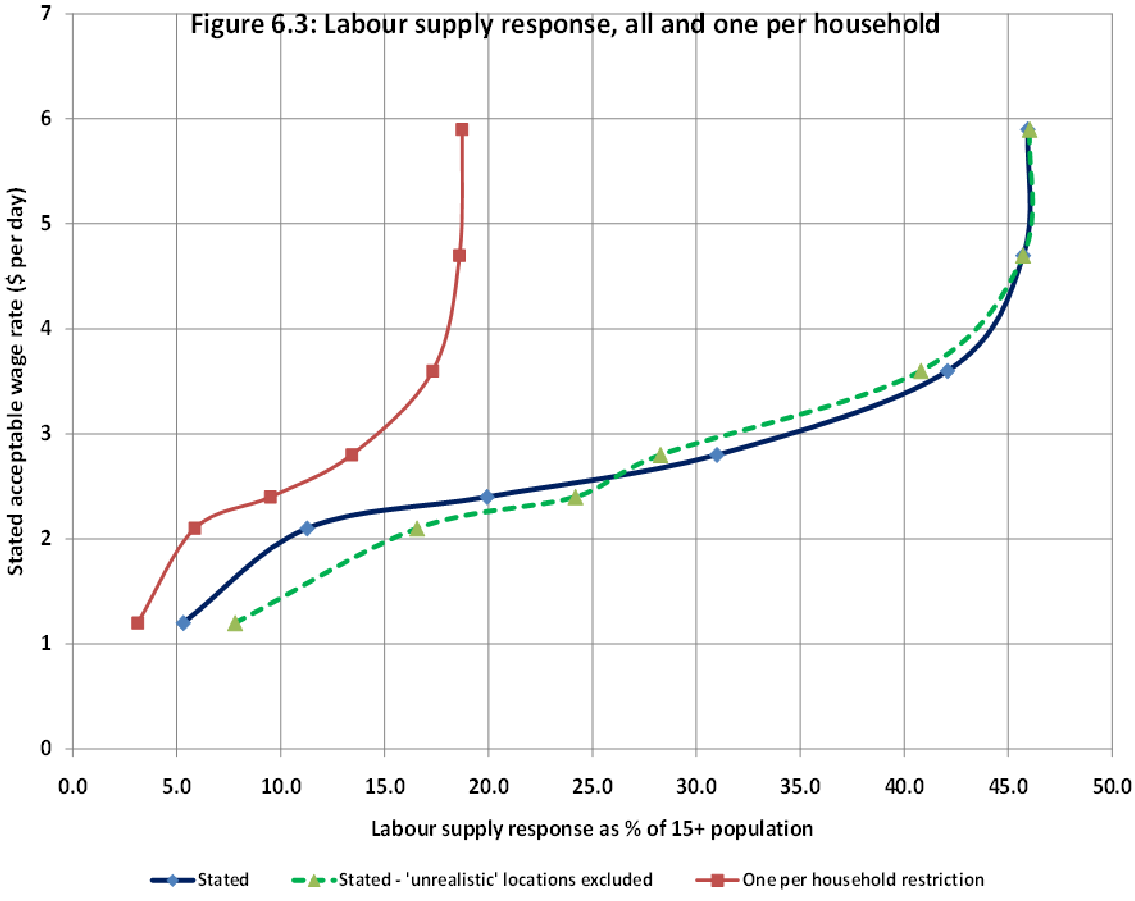
[58] In practice, when such a restriction is imposed, access may be strictly limited to one specific person from a household or more than one person per household could participate as long as the total number of days of employment per household is limited to a given number of days.

Table 6.4: One per household restricted labour supply as per cent of 15+ populations

Minimum acceptable pay for public works ($ equivalent per day)	Number of households with at least one person available for public works	% of all sample households	% of 15+ population in sample households
$1.2	73	12.2	3.1
$2.1	137	22.8	5.9
$2.4	222	37.0	9.5
$2.8	313	52.2	13.4
$3.6	404	67.3	17.3
$4.7	434	72.3	18.6
$7.1	437	72.8	18.7
$7.1+	437	72.8	18.7
All sample households	600		
Population in sample 15+ age range	2333		

Source: The Cambodia Study, Vaidya (2010).

Figure 6.3: Labour supply response, all and one per household



Source: The Cambodia Study, Vaidya (2010)

In addition to estimating the likely labour supply response, it is important to know about the current economic activities of those who state availability for a PEP, the proportion of women and men among those who wish to participate and the age distribution. This information can be obtained by cross-tabulating the data on these characteristics with availability for a PEP at alternative wage rates. In the Cambodia study, 80 per cent of those wishing to participate were engaged in subsistence production broadly reflecting the distribution of economic activities in the sample. The proportion of women willing to participate at lower wage rates was somewhat higher than the proportion of men. On the age distribution of those wishing to participate in the Cambodia study, the proportion of the youngest age group (15 to 24 years) wishing to participate was the highest but this was commensurate with their proportion in the sample population.

Another aspect to be examined in a wage rate and labour supply study is the implications of PEP participation for other economic activities (see sections 5.4.1 and 6.1). This can be addressed by the survey through questions on availability of the respondent for paid work and what would happen to the current activities if such work is taken up (see Tables 4.1 and 4.2 and questions 3.16 and 3.17 in Annex II). This aspect is discussed in Section 7 with an illustration from the Cambodia study.

6.4 Data analysis: Targeting effectiveness

Given the safety net objective of PEPs, the aim in assessing targeting effectiveness is to examine to what extent PEP participation will reach the poorest sections of the population with the greatest need for a safety net. Issues related to targeting effectiveness were discussed in section 3 and the choice of indicators of household living standards was discussed in section 4. With respect to wage rate studies, the issue to be investigated is the effectiveness of the wage rate as a mechanism for targeting the poor. Here, we outline the presentation of data for assessing targeting effectiveness[59]. The implications for policy and operations are considered in section 7.

The indicators of living standards of households could be monetary or non-monetary. Monetary indicators, notably the income or expenditure per head, are considered to be the most direct indicators of living standard. The illustration for examining targeting effectiveness used here is based on a monetary indicator. Targeting effectiveness can also be assessed with non-monetary indicators as we show at the end of this section.

As noted in section 5, conventionally expenditure per head is preferred over income per head. If evidence on expenditure per head is available, the households of those who have indicated availability for a PEP can be put into groups of equal size according to their expenditure level. If they are put in five groups, each group is a quintile with the households with the lowest expenditure per head being put in the lowest quintile. From cross-tabulation of these quintiles with acceptable wage rates for respondents it is possible to obtain evidence on targeting effectiveness.

If targeting within a quintile is effective, a high proportion of those in the very poor category would find low wage rates acceptable and a low proportion of those in the better off quintiles would find them acceptable. Relative targeting across quintiles presents

[59] See Chapter 4 in Grosh et al (2008) for more detailed discussion of targeting effectiveness, exclusion and inclusion errors and their measurement.

evidence on targeting effectiveness for one or more quintiles relative to the total number of persons in all quintiles for a range of wage rates. Table 6.5 illustrates the above points with hypothetical data and provides some two measures of targeting effectiveness: (a) targeting effectiveness within quintile, and (b) targeting effectiveness across quintiles.

Table 6.5: Selected measures of targeting effectiveness: Template

Willingness to work at a given daily wage rate ($)	**Expenditure per head quintiles**					
	Q1: Very poor	**Q2: Poor**	**Q3: Middle**	**Q4: Better off**	**Q5: Best off**	**Total**
Targeting effectiveness within quintile						
1.0	50	40	30	10	0	130
1.5	30	40	40	30	20	160
2.0	15	10	20	50	30	125
2.5	5	8	8	5	25	51
3.0	0	2	2	5	25	34
Total	100	100	100	100	100	500
Total $1.5 or below	80	80	70	40	20	290
$1.5 or below as % of total	80.0	80.0	70.0	40.0	20.0	58.0
Total below $2.0	95	90	90	90	50	415
$2.0 or below as % of total	95.0	90.0	90.0	90.0	50.0	83.0
Targeting effectiveness across quintiles						**Targeting index**
Quintile 1 up to $1.5 as % of all up to $1.5	27.6	No targeting if % at or below			20.0	137.9
Quintile 1 up to $2.0 as % of all up to $2.0	22.9	No targeting if % at or below			20.0	114.5
Quintiles 1 & 2 up to $1.5 as % of all up to $1.5	69.2	No targeting if % at or below			40.0	173.1
Quintiles 1 & 2 up to $2.0 as % of all up to $2.0	55.2	No targeting if % at or below			40.0	137.9
Quintiles 1 to 3 up to $1.5 as % of all up to $1.5	92.3	No targeting if % at or below			60.0	153.8
Quintiles 1 to 3 up to $2.0 as % of all up to $2.0	79.3	No targeting if % at or below			60.0	132.2

Starting with targeting within quintiles in Table 6.5 (the top half of the table), a high level of targeting would be indicated if most of those in "Q1: Very poor" find the lower wage rates acceptable while those in "Q4: Better off" and "Q5: Best off" quintiles are only willing to work for the higher wage rates. The table shows that the numbers and percentages of persons willing to work for $1.0 or lower, $1.5 or lower and $2.0 or lower in the first quintile are 50, 80 and 95 per cent respectively. Comparison with the higher quintiles suggests some evidence of targeting at a wage rates of $1.0 and $1.5 per day since

the percentages of participants at this wage rate from quintiles 4 and 5 are much lower. At the wage rate of $2.0, targeting appears much weaker.

The bottom half of the table shows another way of measuring targeting effectiveness. For a given wage rate, it shows whether the proportion of persons from the lower quintiles is lower or higher than the overall average which represents no targeting. For example, in the row "Quintile 1 up to $1.5 as per cent of all up to $1.5", 27.6 per cent in the second column is the number of persons who find $1.5 or less acceptable for public work employment (i.e. 50+30 in the "Very poor" column) as a per cent of all persons who find such work acceptable at this or lower wage rate (i.e. 130+160 in the "Total" column), i.e. 27.6 per cent. The "No targeting if % at or below" 20 per cent in the same row is the per cent of very poor who are available for public works (100 persons) as a per cent of all who are available for public works (500 persons). Since the calculated targeting index at 27.6 per cent is higher than 20 per cent, there is some evidence of targeting.

The targeting index shows some, but not high, targeting effectiveness at wage rates of $1.5 and $2.0 per day but much greater effectiveness at the lower wage rate as would be expected if the conventional view on the effectiveness of targeting is accepted. The table shows much higher level of targeting for the bottom two quintiles at the wage rate of $1.5 per day (targeting index of 69 per cent compared with a no targeting percentage of 40). Table 6.5 is hypothetical. In Section 7 we look at actual evidence from the Cambodia study and consider the policy and operational implications in the context of findings from Cambodia.

For assessing effectiveness of targeting it is not necessary to categorize households according to monetary indicators of standard of living. Non-monetary indicators can be used if they are suitable for categorizing households into groups according to their standard of living. Examples include amount of land per head that a household has access to, categories of food sufficiency or an index based on ownership of assets which were discussed in section 5.4.2. An electronic copy of Table 6.5 is available as an Excel template which can be easily adapted for use with actual data. The adaptations required would be in the headings for the monetary or non-monetary variable used to categorize households according to living standards, the number of standard of living categories and the range of wage rates.

6.5 Data analysis: Welfare impact of PEP earnings

The fourth aspect to be investigated is the welfare impact of earnings from PEP employment. This could be done quantitatively or qualitatively. The actual amount which could be earned at a given wage rate and the number of days of employment can be readily established. If the household expenditure is known, the welfare impact of the additional earnings can be measured as a percentage increase in the capacity of the household to spend. This could also be expressed on a per capita basis. If data on household level monetary indicator of living standard are not available, earnings from PEP employment can be compared with independent estimates of household incomes and expenditures. Irrespective of whether data on household expenditure are available, a useful comparison would be with the level of expenditure per head which represents the poverty line. In the Timor Leste study, estimated earnings from public works employment were compared with the poverty line and with estimates made by the World Food Programme (WFP) of the average expenditure levels of poor households.

If the aim of a PEP is to provide support at times of shocks, PEP earnings can be compared with the estimated costs of the shock. In the Cambodia study, estimated PEP earnings at alternative wage rates were compared with low and high household expenditure levels to examine the welfare impact. Comparison was also made with the estimated costs of shocks suffered by the sample households (see Section 7). An important qualification is

that if our main concern is with the welfare impact on PEP participants from poor households, the effectiveness with respect to the safety net objective depends not only on the level of earnings from PEP participation but also the effectiveness of targeting.

A qualitative appraisal could either be undertaken instead of the quantitative if data on household expenditure levels are not available and it is infeasible to collect such data as part of the survey or it could complement quantitative measures of welfare impact. The qualitative appraisal could take the form of: (a) FGDs, and /or (b) part of a survey questionnaire which inquires about the main uses of the additional income. Ideally, such inquiries should be followed up when programme implementation has started.

7. Presenting the evidence and analysis and determining the PEP wage rate

7.1 Implications of study aspects for policy and operations

Table 7.1: Policy and operational implications of study aspects

Study aspects	Policy	Operational
1. Labour supply response to alternative PEP wage rates	PEP wage rates. Assessment of the scale and scope of situation to be addressed. Estimates of programme costs and scale at alternative wage rates to assess affordability. Set criteria for selection of participants.	Scale and scope also relevant for planning and implementing operations. Implement criteria for selection of participants.
2. Implications of PEP participation for other economic activities	PEP wage rates. Important to ensure that PEP supplements existing sustainable means of livelihoods.	Phasing of PEP works to minimize disruption of other economic activities. Include studies to assess impact and targeting during programme.
3. To what extent alternative wage rates target poorer sections of the population	PEP wage rates. Evaluation of targeting effectiveness in relation to the programme cost and public asset creation improvement. Set criteria for selection of participants.	Include studies to assess impact and targeting during programme. Implement criteria for selection of participants.
4. Welfare impact of PEP earnings.	PEP wage rates. Evaluation of the welfare impact in relation to the programme cost and public asset creation/ improvement.	Include studies to assess impact and targeting during programme.

This section provides guidance on preparing the type of information and analysis required from wage rate studies at the policy and operational levels. In Table 7.1, we identify the policy and operational implications of the four aspects which are normally investigated by wage rate studies though their relative importance may differ depending on

the specifics of the situation being investigated[60]. The PEP wage rate appears against all four aspects. This is not surprising given the subject of this guide. The level of the wage rate in combination with other policies has implications for each one of the aspects (see section 3). Therefore, when the four aspects have been discussed in this section, the setting of the wage rate is considered in section 7.2 with an illustrative example from the Cambodia study.

Table 7.1 also indicates that as a part of operations there is a need to follow up the wage rate study undertaken at the planning stage of PEP with studies during implementation to appraise and monitor the performance of the PEP with respect to aspects 2, 3 and 4 and to make any necessary adjustments to policy and operations. Investigation of all three aspects can be incorporated into a single study of participants of PEPs.

As the first aspect in Table 7.1 indicates, estimates of labour supply response to a PEP are clearly important for assessing the size and geographical scope of the programme. Further, estimates of labour supply at different wage rates can be used to consider alternative options and associated programme costs. An excel workbook template ***(WageRate-LabourSupply-ProgrammeCost-Model)*** for making estimates of programme costs and assessing the welfare impact under alternative assumptions is available. The workbook has been referred to in this section with more detailed discussion of how it can be used in section 7.3. If estimated programme costs are considered to be too high and unaffordable, one option is to set additional criteria to limit participation. ***WageRate-LabourSupply-ProgrammeCost-Model*** includes number of days of employment per person which could be altered by the user of the template to limit the number of days of participation by a person[61].

Table 7.2 illustrates the type of information and analysis on labour supply response to alternative wage rates and implications for programme costs based on the Cambodia study. The table assumes a PEP for an area with a population of 100,000 persons as an illustration. It shows that if the wage rate is $2.4 per day, about 24 per cent of those in the 15+ age group will be willing to participate. If each person is provided 50 days of public works employment, the annual wage bill part of programme costs will be about $1.84 million. There will clearly be additional non-labour costs which are likely to be 30 to 60 per cent of total programme costs depending on types of projects and labour intensity. These are not shown in this illustration. The ***WageRate-LabourSupply-ProgrammeCost-Model*** enables estimates of overall programme costs.

[60] These four aspects were summarized at the end of section 2 and used in sections 4, 5 and 6 to develop the guide.
[61] The limit could be for an individual or for a household. The latter is the case with the MGNREGA in India.

Table 7.2: Wage rate, labour supply response and labour cost of programme in Cambodia – all respondents, central assumption

Population	
Total target population	100,000
Population in the 15+ age group	64,300
Persons willing and able to participate at given daily wage rate ($) as per cent of 15+ population	**Per cent**
1.2	7.8
2.1	16.6
2.4	**24.2**
2.8	**28.3**
3.6	40.8
Total number available at given daily wage rate ($)	**Number available**
1.2	5,021
2.1	10,650
2.4	**15,549**
2.8	**18,181**
3.6	26,240
Number of days of employment per person offered	**50**
Wage bill at alternative wage rates ($ per day)	
1.2	$301,260
2.1	$1,118,250
2.4	**$1,865,880**
2.8	**$2,545,340**
3.6	$4,723,200
Wage bill as % of GDP at alternative wage rates ($ per day)	**GDP = $9,574,000,000**
1.2	0.00
2.1	0.01
2.4	0.02
2.8	0.03
3.6	0.05
Wage bill as % of public sector expenditure at alternative wage rates ($ per day)	**Public sector exp. = $1,478,000,000.00**
1.2	0.02
2.1	0.08
2.4	0.13
2.8	0.17
3.6	0.32

Source: Adapted from Cambodia Study, Vaidya (2010).

The Cambodia study also showed that if participation is limited to one person equivalent per household for 50 days at $2.4 per day, about 37 per cent of households would participate and the wage bill would be about half of the wage bill without the one per household restriction. Therefore the one per household restriction could be an attractive option if the objective is to reach the largest number of households within a tighter budget constraint. The table also shows the wage bill costs as per cent of GDP and public sector expenditure. The actual numbers are not relevant here since the size of the assumed programme on which they are based is small but the table demonstrates that such comparisons would enable assessment of the affordability of a PEP.

A broader policy consideration is implications for other economic activities of PEP employment (second aspect in Table 7.1), notably whether PEP draws people away from other sustainable economic activities important for rural livelihoods and other employment opportunities. Evidence from the survey and FGDs in response to questions on the implications for other economic activities of PEP participation would be relevant. If there is evidence of disruption of other economic activities, it would be necessary to alter programme design including the wage rate and complementary selection criteria. Any disruptive impact could also be reduced by phasing PEP works during the less busy agricultural seasons.

Table 7.3: Current activities of those available for additional work

	Region					
Current activities	**Tonle Sap**	**Mekong Plain**	**Plateau / Mountain**	**Coastal**	**Whole sample**	**Per cent**
No activities or paid work at present	11	27	10	26	74	4.8
Combine new employment with current activities	274	203	168	63	708	45.9
Give up current paid employment	183	161	32	143	519	33.6
Other family members to do more household chores and work on farm	59	75	50	33	217	14.1
Another family member to take up current paid employment	6	7	5	8	26	1.7
Total	533	473	265	273	1544	100.0

Source: Adapted from Cambodia Study, Vaidya (2010).

Table 7.3 shows responses from the Cambodia study to a question on what would happen to work and other activities currently being undertaken if the respondent took up a new job. The evidence was collected from responses to questions 3.16 and 3.17 in the questionnaire (see Annex II). Less than 5 per cent of those who would take up other work were not engaged in paid work. Nearly 46 per cent of those who would take up other work would combine it with their current activities. This is consistent with the general characteristics of the rural labour market in which the economically active combine a number of activities, typically farming with off-farm employment, to supplement their livelihoods. A substantial proportion (over one-third) would give up their current activity to take up paid employment. In Cambodia, the reason for willingness to give up current paid employment was that the current activity was not sufficiently attractive in length of time and / or reward. Studies would need to examine evidence on current economic activities and acceptable pay for this group of respondents to determine whether there was likely to be any serious disruption of other economic activities.

Table 7.4: Wage rate and welfare impact on households

Average annual hh expenditure[1]	***$***
1st quintile (bottom 20%)	1,033
2nd quintile (next 20%)	1,406
3rd quintile (middle 20%)	1,805
4th quintile (above average 20%)	2,390
5th quintile (top 20%)	6,311
Number of days of PEP employment for a household[2]	***50***
Pay per day	***$2.1***
PEP wage contribution as % of hh expenditure	
1st quintile (bottom 20%)	10.3
2nd quintile (next 20%)	7.6
3rd quintile (middle 20%)	5.9
4th quintile (above average 20%)	4.5
5th quintile (top 20%)	1.7
Pay per day	***$2.4***
PEP wage contribution as % of hh expenditure	
1st quintile (bottom 20%)	11.5
2nd quintile (next 20%)	8.4
3rd quintile (middle 20%)	6.6
4th quintile (above average 20%)	5.0
5th quintile (top 20%)	1.9
Pay per day	***$2.8***
PEP wage contribution as % of hh expenditure	
1st quintile (bottom 20%)	13.8
2nd quintile (next 20%)	10.1
3rd quintile (middle 20%)	7.9
4th quintile (above average 20%)	6.0
5th quintile (top 20%)	2.3
Pay per day	***$3.6***
PW wage contribution as % of hh expenditure	
1st quintile (bottom 20%)	17.2
2nd quintile (next 20%)	12.7
3rd quintile (middle 20%)	9.9
4th quintile (above average 20%)	7.4
5th quintile (top 20%)	2.8

Note:

1 - Assumptions are average household size in adult equivalent of 4.7. The average expenditure per head of $0, 6 equivalent per person per day for the 1st quintile (bottom 20%), $0.8 per person per day for the 2nd quintile, $1.1 per person per day for the 3rd quintile, $1.4 per person per day for the 4th quintile and $3, 7 per person per day for the 5th quintile (top 20%) derived from MOPS data on household consumption expenditure.

2 – The total number of days of PEP employment could be by one hh member or shared between more than one members.

Source: Adapted from Cambodia Study, Vaidya (2010).

The effectiveness of targeting and the welfare impact on households of PEP earnings (aspects 3 and 4 respectively in Table 7.1) are important considerations in formulating the overall policy to use a PEP as a safety net instrument and in designing a PEP. We illustrate the assessment of welfare impact first.

As noted in 5.4.2 above, one approach to representing the welfare impact of PEP employment on a household is the contribution of PEP earnings as a proportion of household expenditure. Table 7.4 shows an illustration from the Cambodia study of the welfare impact of earnings from public works employment as a proportion of household expenditure. The expenditure data for samples of households were collected by the Cambodia Development Resource Institute (CDRI) as part of its Moving Out of Poverty Study (MOPS). The expenditure includes the value of subsistence production consumed[62].

The rows under the heading "Average annual hh expenditure" in table 7.4 show the calculation of average annual consumption expenditure for households in each expenditure per head quintile based on an average adult equivalent family size of 4.7 persons. The rest of the table shows the contribution of earnings from 50 days of PEP employment at alternative wage rates as proportions of hh expenditure for average hhs in each quintile. The relative contribution of earnings from PEP employment as a proportion of its expenditure varies depending on the level of household expenditure. Evidently for given PEP earnings the welfare impact is higher for poorer households. At a daily wage rate equivalent to $2.4, the contribution made by earnings from a PEP would be about 11.5 per cent of the total expenditure for an average household in the bottom expenditure per capita quintile while it would only be 5 per cent for the average household in the fourth quintile.

The impact of income from PEP employment on particular households would vary depending on its size since the calculations in Table 7.4 are for an average sized household[63]. If more than one person from a household participates, the contribution at the household level would be higher. The percentage contributions in Table 7.4 are proportions of annual expenditure. During the time when a household member is being paid for PEP participation, the contribution to the household's welfare will be much higher. If PEP activities are phased to be during periods when households are short of food or income earning opportunities, the PEP would make an important income and expenditure smoothing contribution.

The monetary impact from PEP employment can be estimated if it has been possible to obtain information on household expenditure levels. It was noted in section 5 that such information is not easy to obtain reliably from wage rate studies. In the absence of such information, there are two alternatives: (a) comparison of earnings from PEP employment with information on expenditure of poor households from other sources, and (b) inclusion of questions on how households intend to spend the additional cash income.

On the first alternative, in the Cambodia study a comparison was made between PEP earnings for a given number of days at a given wage rate with the expenditure level used to define the poverty line. The distribution of household expenditure levels for households in the study sample was also compared with a recently estimated rural poverty line. In the Timor Leste study, it was not possible to collect data on household expenditure levels. Evidence from another source, a recent World Food Programme study (WFP, 2006) of food insecure households, was used to assess welfare impact of PEP employment on poor

[62] In the technical literature, a distinction is made between actual household expenditure within a given period and consumption. The latter includes imputed values for the use of consumer durables owned by the household, imputed rent for owner-occupied living accommodation and consumption of own produce. The expenditure data used here include value of own consumption but not imputed values for durables or living accommodation. The term household expenditure is used here.

[63] If average household size varies between quintiles, this variation should be allowed for when calculating the contribution of the income from PEP employment as a proportion of its expenditure. Another option is to deal with variation in household size with different standards of living would be to create quintiles for persons instead of households (Grosh, 2008). In the Cambodia study, there were no large variations in average household size and therefore, these refinements were not made.

households. According to this analysis, about 20 per cent of households were considered to be food insecure, 23 per cent highly vulnerable and 21 moderately vulnerable. The average monthly expenditures per person for these households were $4.6, $7.6 and $10.7 for the food insecure, highly vulnerable and moderately vulnerable households respectively.

Table 7.5: Household level benefits of PEP employment under alternative assumptions – Illustration from the Timor Leste study

	3 months of PEP employment for a household
No of days of employment (1)	66
Earnings from PEP employment (2)	132
WFP 2006 - Food insecure	
Average annual household expenditure (3)	309
PEP earnings as % of household expenditure	42.7
WFP 2006 - Highly vulnerable	
Average annual household expenditure (4)	511
PEP earnings as % of household expenditure	25.8
WFP 2006 - Moderately vulnerable	
Average annual household expenditure (5)	719
PEP earnings as % of household expenditure	18.4

(1) 22 working days per month assumed. On average, 2.4 persons available per household.
(2) At $2.00 per day wage rate.
(3) Assuming a household size of 5.6 persons (Timor Leste Survey of Living Standards Survey, 2007, and the Timor Leste Study, 2008) and monthly expenditure of $4.6 per person per month (WFP, 2006).
(4) Assuming a household size of 5.6 persons and monthly expenditure of $7.6 per person per month (WFP, 2006).
(5) Assuming a household size of 5.6 persons and monthly expenditure of $10.7 per person per month (WFP, 2006).

Source: Adapted from Timor Leste study, Vaidya (2008)

Table 7.5 shows earnings from PEP employment for three months which could be the typical length of time for which a person could be employed on a PEP. It is assumed that employment is limited to one person per household. For the "food insecure", on average the contribution of earnings from PEP employment as per cent of household expenditure would be significant, about 42 per cent. For the "highly vulnerable" and "moderately vulnerable" households, the proportional contributions are lower (26 and 18 per cent respectively) but nevertheless significant. The Timor Leste survey evidence showed that for households from which persons were willing to participate, on average 2.4 persons were willing to participate. Therefore, if the one person per household restriction is not placed, the contribution of PEP earnings would be even larger. However, there could be equity issues since households with larger number of members participating would benefit more from PEP employment.

The second alternative in the absence of household level expenditure data from the study is to include questions on how the household would use additional cash income. Generally, poorer households tend to use additional income (especially if they are food insecure) on food and other essential items or to pay off debt. If there is more expenditure on schooling or health, these would also be positive welfare impacts. Ideally, follow up studies when a PEP is in place should be carried out to compare stated intention responses

before employment and when income is in hand. It should be noted that obtaining an indication of the monetary contribution to household expenditure and information on how additional income might be used are not mutually exclusive and doing both will produce a more rounded picture.

Another safety net role for households offered by PEPs is support when the household suffers from a shock, either because of change in specific circumstances of the household or a natural or economic occurrence with wider impact on a part of a country or the whole country. Questions can be included in the wage rate and labour supply study questionnaire on whether the household has suffered a shock, the type of shock and how it coped with it (see questions 4.1 and 4.2 in Annex II). Using the Cambodia study as an illustration, about two-thirds of all households had suffered at least one type of shock during the last six months. Examples of shocks included family shocks (31 per cent) such as death of a family member, illness in the family and fire. Natural shocks (26 per cent) included crop failure, crop damage by flooding and death of livestock. Economic shocks (17 per cent) included loss of a family member's job or fall in earnings.

The average monetary cost of each type of shock estimated by households was $85, $57 and $63 respectively for family, natural and economic shocks. Earnings from fifty days of public works employment for a household at the wage rate of $2.4 would be $119 which would clearly more than compensate for the average monetary cost of the shock. In response to a question on how households coped with shocks, largest amounts were raised by households from sale of assets followed by seeking help from friends, relatives and others, borrowing and spending from savings. Looking for jobs was also an option. Clearly, access to local public works employment would reduce the need to sell assets, borrow and draw down savings.

The focus above is on the contribution of PEP earnings to the livelihoods of poor households. However, the extent to which poor households benefit from PEP employment depends on the effectiveness of targeting. The conventional case for setting the wage rate at a lower level is to target poor households but the lower wage rate for a given amount of employment per household reduces the income support provided by the PEP. Further, in section 3 we pointed out that while the wage rate has some intuitive appeal as an instrument for targeting the poor (i.e. at lower wage rates, poorer people will be willing to work on a programme but not the better off), the actual situation can be more complex. In section 6 we showed how targeting effectiveness can be assessed. We do not intend to repeat the discussion in sections 3 and 6 here but to examine some policy implications based on the evidence from the Cambodia study (see Tables 7.6 and 7.7).

Table 7.6 presents evidence from the Cambodia study on the number of persons stating availability for public works at a given wage rate and the expenditure per head quintile in which the person's household falls. Table 7.7 presents similar evidence but with households put into quintiles according to access to cultivable land instead of expenditure per head. As explained in section 6 with the help of Table 6.5, the top part of Table 7.6 shows the evidence followed by some calculations of indicators of targeting effectiveness within quintiles and relative targeting across quintiles. If targeting within a quintile is effective, a high proportion of those in the very poor category would find low wage rates acceptable and a low proportion of those in the better off quintiles would find low wage rates acceptable. Relative targeting across quintiles presents evidence on targeting effectiveness for one or more quintiles relative to the total number of persons (or households in the one per household cases) in all quintiles for a range of wage rates.

Starting with targeting within quintiles in Table 7.6, the numbers and percentages of persons willing to work for $2.1 or lower and $2.4 or lower in the first quintile are 28.8 and 51.1 per cent respectively. This implies that nearly 50 per cent of the "Very poor" would not undertake public works for less than $2.8. Comparison with the higher quintile suggests very weak targeting since somewhat lower per cent of "Poor", "Middle" and "Above

average" than the "Very poor" indicated $2.1 per day acceptable. However, the per cent of the "Top 20%" finding $2.1 per day acceptable is almost the same as that for the "Very poor".

Evidence on targeting across quintiles also shows weak targeting. There is some degree of targeting if the per cent of the "Very poor" accepting $2.1 or lower wage rate is greater than 21.7 per cent. The targeting index (25.6 per cent as a per cent of 21.7 per cent in this case) is 117.8 and indicates some level of targeting. A similar calculation for wage rates up to $2.4 also indicates some level of targeting of persons in the lowest expenditure quintile. However, similar calculations of targeting effectiveness for quintiles 1 and 2 ("Very poor" and "Poor") for $2.1 and $2.4 indicate no targeting or even somewhat negative targeting since the targeting indices are below 100. This implies that there is a higher representation of persons from the three upper quintiles for wage rates of $2.1 and $2.4 or below and a similar result for the bottom three quintiles. Arguably, at the lowest wage rate of $1.2, there would be a higher representation of the "Very poor". While the proportion of the "Very poor" is significantly higher at this wage rate, there are substantial numbers of those in the higher expenditure quintiles willing to work for $1.2 and the number of persons from the highest quintiles is higher than that from the lowest. This evidence corroborates the discussion in section 3.4 which casts doubts on the efficacy of wage rates by themselves as a means of targeting the poor and the welfare implications of low wage rates (sections 5.4.2 and 7.2).

Table 7.6: Acceptable pay for public works by household expenditure quintiles and targeting

Willingness to work at a given wage rate ($ per day)	**Quintiles of consumption per head by village aggregated to total**					
Targeting effectiveness within quintile	**Very Poor**	**Poor**	**Middle**	**Above average**	**Top 20%**	**Total**
1.2	32	17	20	17	37	123
2.1	35	23	39	23	19	139
2.4	52	46	54	22	28	202
2.8	55	59	36	62	46	258
3.6	37	50	66	46	60	259
4.7	22	24	10	14	15	85
5.9	0	0	0	5	0	5
7.1	0	0	1	1	0	2
Total	233	219	226	190	205	1073
Targeting within quintiles						
Total $2.1 or below	67	40	59	40	56	262
$2.1 or below as % of total	28.8	18.3	26.1	21.1	27.3	24.4
Total below 10,000 riel	119	86	113	62	84	464
$2.4 or below as % of total	51.1	39.3	50.0	32.6	41.0	43.2
Targeting effectiveness within quintile						**Targeting index**
Quintile 1 up to $2.1 as % of all up to $2.1	25.6	No targeting if % at or below			21.7	117.8
Quintile 1 up to $2.4 as % of all up to $2.4	25.6	No targeting if % at or below			21.7	118.1
Quintiles 1 & 2 up to $2.1 as % of all up to $2.1	39.8	No targeting if % at or below			42.1	94.6
Quintiles 1 & 2 up to $2.4 as % of all up to $2.4	40.8	No targeting if % at or below			42.1	96.9
Quintiles 1 to 3 up to $2.1 as % of all up to $2.1	56.1	No targeting if % at or below			63.2	88.8
Quintiles 1 to 3 up to $2.4 as % of all up to $2.4	63.4	No targeting if % at or below			63.2	100.3

Source: Adapted from Cambodia Study, Vaidya (2010).

Given the apparent poor targeting effectiveness of poverty measured on the basis of household expenditure level per head, targeting effectiveness of access to land for cultivation as a proxy indicator for household standard of living was examined in the Cambodia study. Table 7.7 shows the number of persons stating availability for public works at a given wage rate and quintiles of cultivable land that the person's household has access to. The bottom quintile includes persons from landless households. The targeting indices being well in excess of 100 in the table show clear evidence of a level of targeting especially with respect to a wage rate of $2.1 and the targeting of the bottom two quintiles. However, at $2.1, based on stated availability for public works, nearly 19 per cent of participants will be from households in the top two quintiles.

Table 7.7: Acceptable pay for public works by access to cultivable land quintiles and targeting

Willingness to work at a given wage rate ($ per day)	**Quintiles of cultivable land access per head for whole sample**					
Targeting effectiveness within quintile	**Lowest 20% including landless**	**Next 20%**	**Middle 20%**	**Above average 20%**	**Highest 20%**	**Total**
1.2	22	34	35	19	14	124
2.1	38	51	34	10	6	139
2.4	40	29	40	52	41	202
2.8	19	34	34	92	79	258
3.6	60	39	48	63	49	259
4.7	19	22	12	20	12	85
5.9	0	0	5	0	0	5
7.1	0	0	1	1	0	2
Total	198	209	209	257	201	1074
Targeting within quintiles						
Total $2.1 or below	60	85	69	29	20	263
$2.1 or below as % of total	30.3	40.7	33.0	11.3	10.0	24.5
Total below $2.4	100	114	109	81	61	465
$2.4 or below as % of total	50.5	54.5	52.2	31.5	30.3	43.3
Total in each quintiles	471	470	459	499	434	2333
Targeting effectiveness within quintile						**Targeting index**
Quintile 1 up to $2.1 as % of all up to $2.1	22.8	No targeting if % at or below			18.4	123.7
Quintile 1 up to $2.4 as % of all up to $2.4	21.5	No targeting if % at or below			18.4	116.7
Quintiles 1 & 2 up to $2.1 as % of all up to $2.1	55.1	No targeting if % at or below			37.9	145.5
Quintiles 1 & 2 up to $2.4 as % of all up to $2.4	46.0	No targeting if % at or below			37.9	121.4
Quintiles 1 to 3 up to $2.1 as % of all up to $2.1	81.4	No targeting if % at or below			57.4	141.9
Quintiles 1 to 3 up to $2.4 as % of all up to $2.4	69.5	No targeting if % at or below			57.4	121.1

Source: Adapted from Cambodia Study, Vaidya (2010).

The evidence from the Cambodia study shows weak targeting. Therefore, a significant proportion of public works participants are likely to be from average and better off households even at low wage rates. Based on access to land for cultivation as a proxy for household living standards, at the wage rate of $2.1 per day, 55 per cent of those willing to participate are from households in the bottom two quintiles (including landless households) implying that 45 per cent are from the top three quintiles. The targeting according to access to land indicator is somewhat weaker at the wage rate of $2.4 per day with 46 per cent of households in the bottom two quintiles.

Based on expenditure per head, about 60 per cent of persons stating availability for PEP employment are likely to be from households in the top three quintiles at the wage rate of $2.1 (calculated from Table 7.6). If the data are reliable, this implies no targeting at all and the situation is not improved by lowering the wage rate still further since at the wage rate of $1.2 per day, the percentage of persons from the top three quintiles is also about 60 per cent. At the wage rate of $2.4 per day, the targeting appears to be slightly better with 44 per cent of households of those wishing to participate in the bottom two quintiles and therefore 56 per cent are from the top three quintiles. This evidence suggests slightly better targeting at the higher wage rate.

While data problems cannot be completely ruled out, they are unlikely to be fully responsible for the poor targeting evidence in the study. The most likely explanation is that variation in the value of labour within households, implying imperfectly functioning local labour markets, renders public works employment at a given wage rate attractive to surplus labour in less poor households in some cases but unattractive to members of poorer labour constrained households. Evidence on actual cash earnings in the Cambodia study showed that poorer households tended to have fewer cash earners and smaller amounts of land than better off households. However, the cash earners from poorer households had a range of high and low cash earnings. Better off households either have more land or a larger number of household members with a range of high and low cash earnings.

It is clear that there are a number of unanswered questions regarding the effectiveness of the wage rate as the sole targeting instrument and the efficacy and effectiveness of using other instruments in conjunction with the wage rate. These are discussed in section 7.2 below. It is necessary to investigate targeting effectiveness during programme implementation to monitor and improve targeting performance. It should also be noted that family, natural and economic shocks are suffered by poor as well as better off households. Therefore, the benefit to average and better off households of earnings from participation in a PEP is to compensate for the monetary costs of shocks and possibly to prevent them from slipping into poverty, fulfils a valuable safety net function.

7.2 Wage setting

A PEP is an intervention in the labour market as noted in section 1.2. Setting the wage rate requires the balancing of all aspects in Table 7.1 and therefore investigation of these four aspects form the central theme of this guide. The evidence gathered during the study and its analysis (outlined in sections 4 to 6) are clearly important inputs into arriving at the PEP wage rate. However, the broader appraisal of labour market operation and evidence on wage rates and earnings in comparable activities are also important. The summary table adapted from the Cambodia study (Table 7.8) illustrates the range of evidence to be used in setting the wage rate.

Rows 1 and 2 in Table 7.8 indicate that according to FGD participants, the rural wage rate in agriculture was in the $2.4 to $2.8 per day range with some regional variations. The FGD participants in three out of the four locations (the exception was the village in the Plateau / Mountain region) also felt that a wage rate similar to the agricultural wage rate or a little lower would be acceptable for public works.

The ILO / CARD survey evidence shows that for almost 50 per cent of those who had cash earnings (about one-third of the economically active), the equivalent pay per day was $2.1 or lower but the mean earnings were $2.6. At the lower end, the earnings included self-employment including petty trading and selling farm produce and regular unskilled employment where daily equivalent pay rates are typically low with in kind supplements such as food (e.g. for someone in domestic service paid monthly). Therefore some of the activities and earnings are not comparable with casual daily paid wage labour requiring manual work with the expectation of meeting productivity targets (especially on LB programmes).

In response to the question on acceptable pay for public works employment requiring manual work, $2.1 or lower was indicated as an acceptable wage rate by 12.5 per cent of economically active respondents[64], for 22 per cent of the economically active, $2.4 or lower was acceptable and for 34 per cent of the economically active $2.8 per day or less was acceptable (row 4 in Table 7.8). For households with more than one person willing to participate, a household member with the lowest declared wage rate is included. As noted earlier, at least one person declared availability for public works employment in 437 of the 600 households (73 per cent) in the sample. Table 7.8 (row 5) shows that at least one person from 23 per cent of households would be willing to participate at a wage rate of $2.1 per day or lower. The corresponding percentages of households for $2.4 and $2.8 are 38.5 per cent and 53.0 per cent respectively.

[64] Those who had engaged in an economic activity for at least one hour during the reference period or were available for work (see section 3.3.4).

Table 7.8: Summary of evidence on wage rates and earnings – Cambodia study

	Source	Wage rates and earnings	Comments
1.	CARD / ILO FGD Rural wage rates	Agricultural wage rates in $2.4 to $2.8 per day range.	Some regional variation with somewhat higher wage rates in Mekong and Plateau / Mountain locations. Pay on a daily basis, normally related to performance. Pay could be lower (from one FGD) – $1.2 to $1.7 per day if 3 to 6 months in advance (likely to be a distress wage rate).
2.	CARD / ILO FGD Acceptable public works wage rate	Wage rate comparable to agricultural wage rates thought to be acceptable.	More specifically, at the lower end of the agricultural wage rate range.
3.	CARD / ILO actual earnings (all activities – wage employment and self-employment)	For 48% of those with cash earnings, pay was equivalent to $2.1 or lower. For 73% of those with cash earnings, pay was equivalent to $2.8 or lower. One-third of economically active had some cash earnings during reference period. Mean: $2.7. Median: $2.4.	There is a wide distribution of earnings rates (less than $0.25 to $24 per day). $2.4 is the mode with 18% of the sample earning this wage rate. Wages and earnings at the time of the survey may have been somewhat lower than normal because of financial crisis.
4.	CARD / ILO stated acceptable wage rate for public works employment – all respondents	$2.1 per day or less acceptable for 12.5% of economically active. $2.4 or less acceptable for 22% of economically active. $2.8 or less acceptable for 35% of economically active.	With stated acceptable wage rate, there is a possibility of a bargaining element or unrealistic expectations especially in villages with limited cash earning as reference.
5.	CARD / ILO stated acceptable wage rate for public works employment – only one per household	$2.1 per day or less acceptable for 6.6% of economically active and for at least one member of 23% of households. $2.4 or less acceptable for 11% of economically active and at least one member of 38.5% of households. $2.8 or less acceptable for 15.2% of economically active and at least one member of 53% of households.	For households with more than one person available for public works employment, the wage rate is for the person with the lowest acceptable wage rate.
6.	2008 survey of households cited in World Bank / UNICEF (2010)	Agricultural wage rates in May-June 2008: Transplanting rice: $2.50 per day. Harvesting, weeding and transplanting: $2.75 per day. Land clearing: $3.25 per day. Construction: $3.38 per day.	Sharp increases in agricultural wage rates (ranging between 35 and 67 per cent) since mid-2007. Some reductions since mid-2008 because of the financial crisis (see row 7 below).
7.	CDRI vulnerable workers' surveys	About $2.4 per day for rice field workers in the February and May 2009 surveys. Down to $2.1 per day in August 2009. Unskilled construction workers (Phnom Penh) $3.4 per day in May, small fall by August 2009.	Small sample. Sharp increase in rice field workers' wage rates since November 2007 because of higher rice prices. Fall in August 2009 most probably because of the financial crisis and fall in rice prices from the peak in 2008.
8.	WFP	Payment in rice equivalent to about $2.25 per day.	3.5kg of medium quality rice given for 1 cubic metre of earthworks (value about $0.43). Estimated cash value of rice per day assumes productivity of 1.5 cubic metres per day.
9.	ADB Emergency Food Assistance Project	Payment in cash equivalent to WFP payment.	

Source: Adapted from the Cambodia Study, Vaidya (2010).

Evidence from other sources shows that rural wage rates for unskilled labour rose sharply in nominal terms between mid-2007 and mid-2008. According to a survey of over 2200 households cited in World Bank / UNICEF (2010), wage rates rose between 35 and 67 per cent over this period depending on the type of activity. In May-June 2008, they were $2.50 per day for transplanting and higher for other activities (row 6 in Table 7.8). For the small samples from the vulnerable workers' surveys, the average wage rates of rice field workers and unskilled construction workers were approximately $2.4 and $3.4 per day respectively in May 2009 (row 7 in Table 7.8). Rice field workers' wage rates had apparently fallen sharply to 8,800 riel ($2.1) per day by August 2009 while construction workers' wage rates had fallen very slightly.

The WFP Food for Work (FFW) programme provides participating households employment for some 30 days for which each household receives the equivalent in food of some $70 or $2.25 per working day (about 9,500 riel). Figures for the ADB cash for work programmes are not yet available although as they follow WFP procedures it is estimated that the wage rate and duration of employment are similar to those on Food for Work programmes.

The evidence summarized above shows that there is a spread of wage rates for different activities and there are seasonal and regional variations. Taking account of this range, the evidence on the range of acceptable wage rates for public works from the survey and efficiency wage considerations, a wage rate equivalent to about $2.4 (10,000 riel) was recommended. An efficiency wage element was considered relevant because of the emphasis in the proposed programme objectives [65] on the effective asset creation function. Ultimately, setting the wage rate is a matter of judgement in the context of the specific situation. Nevertheless, some general conclusions can be drawn on the aspects which have a bearing on the wage rate and associated decisions on rationing access to a PEP.

7.2.1. Programme scale and costs

This is a matter for policy based on how serious the situation is, what the priorities are, including the balance between the asset creation or preservation and safety net objectives, and what is affordable. The wage rates, the estimated labour supply responses at alternative wage rates and associated options on rationing access to the programme provide an input into formulating the policy and designing the programme. The evidence from a wage rate study and the WageRate-LabourSupply-ProgrammeCost-Model can be used to examine the options.

7.2.2. Public works construction and maintenance

It has been noted earlier quoting Tajgman and de Veen (1998) [66] that based on experience of ILO projects, consequences of low wages with respect to the asset creation function are low productivity, absenteeism and high turnover of workers. While there are no recent known systematic studies of the relationship between wage rates and productivity in public works2, the Substitution of Labor and Equipment in Civil Construction studies

[65] The programme was being developed as a part of the Social Protection Strategy for the Poor and the Vulnerable by the Government of Cambodia Council for Agriculture and Rural Development (CARD).
[66] Also see Steidl, Brudefors and Shone (1998).

undertaken by the World Bank in the 1970s and 1980s are of relevance. The Phase Two studies reported in World Bank (1986) and referred to in McCutcheon (2008) state that "labour productivity can be improved very significantly by the introduction of certain organizational, management and mechanical improvements". Ten to twenty fold improvements in labour-productivity were noted, for example, in earth excavation. In particular this was achieved through the linking of payment to completion of specified tasks. Later the skill of the site supervisor was recognized as a major contributory factor.

Based on this evidence, and recognizing that there is no single rural market wage rate the following two propositions provide guiding principles for setting wage rates for PEPs:

- If the PEP component is LI for the construction and maintenance of local assets of direct benefit to the local community, the wage rate should be comparable with market wage rates but could be at the lower end of the range of market wage rates for comparable work if the welfare impact is considered to be adequate.
- If the PEP component is LB, the wage rate should take account of efficiency wage considerations and be related to performance. Therefore, the wage rate set with reference to the market wage rate should be at the higher end of the range of market wage rates. This will typically be comparable with wage rates for work requiring higher effort during the busy agricultural season. If LB works are through contractor operation, they will be responsible for setting the wage rate. For efficient LB operations, contractors' wage rates will incorporate an efficiency wage element. However, there could be issues with managing contractors to ensure efficient operations and payment of adequate wage rates. This issue is not directly related to setting the wage rate but with programme management. It is considered briefly in section 8.

As noted earlier (section 2.2), EGSs may include LI and LB components. Therefore the guiding principles for LI and LB works would apply as appropriate. One aspect to be considered would be whether different wage rates could be paid for different components in the same programme. This question and some suggestions on how the differentiation could be managed are considered in section 8.

7.2.3. Welfare impact

In the context of the rural economy, PEP employment will not be the sole means of livelihood for households but will supplement the existing means of livelihoods. What level of support is appropriate cannot be determined in general. In making a decision on the wage rate, the wage rate study provides evidence on the level of support alternative wage rates along with the number of days of employment provided.

Approaches to assessing the welfare impact have been discussed in this guide (see sections 5.4.2, 6.4, 6.5 and 7.1). The WageRate-LabourSupply-ProgrammeCost-Model supplied with this guide and discussed in sections 7.1 and 7.2 includes a worksheet for assessing welfare impact. The worksheet can be used to examine the contribution that income from PEP employment provides. If this impact is considered to be too low, it can be adjusted by either increasing the wage rate or the number of days of employment subject to affordability. With both options, there is a risk of disrupting other economic activities though this could be low with a well-managed and phased programme (see below). An exceptional situation is where a conscious decision based on welfare reasons is made to set the floor for market wage rates if a large proportion of the rural labour force (e.g. from landless households) are reliant on waged employment for their livelihoods and prevailing wage rates are considered to be too low and the number of other employment opportunities are too limited because of labour market conditions (see sections 2.2 and 3.4 above).

7.2.4. Minimizing disruption of other economic activities

The PEP wage rate is clearly an important influence on choices made by people between PEP participation and other activities and hence on the scale of PEP activities. However, the scale of a PEP does not depend entirely on the wage rate and labour supply response but the other rationing devices used (see the "Targeting" heading below). The severity of the disruption of other economic activities depends on the size of the PEP in relation to local labour and economic conditions. Further, the disruption can be reduced by phasing activities during the less busy agricultural season. In discussing welfare impact above, the deliberate policy to "disrupt" the market by setting the PEP wage rate sufficiently high to establish a floor for rural wage rates above the prevailing wage rates was mentioned. Such a policy should not be applied on a large scale without considering the possible consequences for other productive activities and the programme resource commitments required.

Much of the evidence on PEPs shows that they provide short-term employment. Even if they are larger programmes, typically a limited number of days in any year are offered. Therefore, well managed and phased PEPs are unlikely to be major disruptive influences.

7.2.5. Targeting

It has already been noted in this guide (sections 3.4, 5.4.2 and 7.1) that a low wage rate is not necessarily an effective devise for targeting the poor. In their review of evidence on targeting effectiveness of a range of social safety net instruments, Coady, Grosh and Hoddinott (2004) found that for public works programmes, the wage rate is rarely the sole rationing device and the use of a combination of targeting methods improves the ability to reach the intended beneficiaries. According to Subbarao et al (2013), a review of targeting methods on 76 public works programmes found that most of them use multiple targeting methods. Only 10 per cent of programmes used self-selection based on the wage rate as the sole instrument, 34 per cent combined self selection with other methods and 56 per cent did not use self selection at all.

Evidently most PEPs require other types of rationing devices which have their pros and cons in terms of effectiveness of targeting and ease and effectiveness of administration. The sole use of a low PEP wage rate for precise targeting of poor households is unlikely to be satisfactory unless the aim is to provide employment of last resort (ELR) [67]. Further, with a low wage ELR PEP, the welfare impact will be limited and the asset improvement objective will be compromised.

A further practical consideration which reduces the effectiveness of the wage rate as the sole targeting device is geographical variations in labour market conditions. While there might be justification for setting different wage rates between regions or localities on the grounds of differences in labour market conditions and living costs, objections against such geographical differentiation are the complexity of setting and adjusting different wage rates and the perception of inequity between areas. A uniform wage rate across regions reduces the targeting effectiveness of the wage rate.

Therefore, there will be a need to complement the wage rate by additional targeting or rationing arrangements. The options usually include arrangements which could improve

[67] Evidence from the Cambodia study (see section 7.1) indicates that a low wage rate may not be effective in targeting the poorest households.

targeting but at some administrative costs and potential for distortions (e.g. community level identification of poor households) or simpler transparent rules but with limited targeting effectiveness (e.g. one per household and/or number of days per household member restriction or random selection of participants).

7.2.6. Inflation adjustment

PEP wage rates would need to be reviewed and revised from time to time in response to changes in labour market conditions and cost of living. If such adjustments are not made, effectiveness of public works implementation would decline because of lower participation and low productivity and the welfare impact would also be reduced. A periodic review of changes in rural labour market conditions and wage rates and in the cost of living would be required to determine whether the PEP wage rate needs to be revised and by how much.

7.3 The wage rate – labour supply – programme cost model

The ***WageRate-LabourSupply-ProgrammeCost*** model or template, an excel workbook with four worksheets and a chart, are available with this guide to derive estimates of programme costs based on alternative wage rates and labour supply responses. Table 7.9 introduces the parts of the workbook.

Two types of data can be inserted on the *Param&DataEntry* worksheet. The first type is general demographic and economic data such as total target population and the proportion of adults in the population, the currency unit and the exchange rate (required for conversion into $s if required) and GDP and public expenditure in the country for the latest year if a comparison of programme cost is to be made with the GDP and public expenditure. All the calculations are in Cambodian riel as the local currency with total expenditures converted into US$s. The currency can be readily changed by entering the appropriate currency name and exchange rate on the *Param&DataEntry* worksheet.

The next set of data to be inserted is the labour supply response at alternative wage rates which would be obtained from the wage rate study. The wage rate is in US$s initially but this can be readily changed to another currency if required. The labour supply is a % of all those in the labour force age group (15 to 64 years) and therefore the total labour supply at a given wage rate can then be calculated (shown on the *LabSupWageBillProgCost* worksheet).

Table 7.9: WageRate-LabourSupply-ProgrammeCost worksheets

Worksheet	Function
Param&DataEntry	For entering programme and country specific data.
LabSupWageBillProgCost	Shows the estimated labour supply response, the wage bill and programme costs under alternative assumptions on the wage rate and other programme costs.
LabSupStated – Chart	Chart - Labour supply as % of population in the labour force age group.
WelfareImpact	Earnings from programme employment as a proportion off household expenditure.
Calculation of compensation	For estimating programme costs based on the wage rate, employment and other cost estimates.

In order to calculate the wage cost and the welfare impact of the programme, the number of days of employment input is included. Initially it is set at 50 days per person but

this can be altered and the change will be reflected in the wage bill and programme costs as well as the welfare impact. If there are alternative estimates of the relationship between the wage rate and the labour supply, these could either be inserted on the same sheet or a new sheet based on a copy of the *LabSupWageBillProgCost* worksheet.

A data input area for labour supply response, if participation is limited to one person per household, is also included. A new worksheet can be readily created by copying the *LabSupWageBillProgCost* sheet to produce results under this option.

The remaining data input is for non-labour costs of the programme: (a) tools, materials and overheads at the site level, and (b) programme management costs. Both these would have to be estimated for the specific programme. Some hypothetical numbers have been inserted in the template. For the site level the non-labour cost is specified per employment day for unskilled and semi-skilled employment days (12,000 riel initially inserted is about $2.85 per employment day). This may be reasonable for a LB project but probably on the high side for LI.

The data entered on the *Param&DataEntry* page are copied automatically into the *LabSupWageBillProgCost* to produce the required results. This worksheet shows the labour supply elasticity, the total labour supply response and wage bills followed by the programme costs. These aggregates are also shown as percentages of GDP and public expenditure to give an indication of scale. Labour intensity is shown as unskilled labour cost per cent of total programme cost. Labour intensity is higher for higher wage rates and programme costs as would be expected.

LabSupStated-Chart shows the labour supply curve as the per cent of the population in the labour force age group available at a given wage rate. This chart is linked to the relevant cells in *LabSupWageBillProgCost* and therefore would be modified according to the new data. The worksheet *WelfareImpact* can be used to show the earnings from PEP employment as a proportion of household expenditure for different levels of expenditure. On this worksheet, the levels are average expenditures for the five expenditure quintiles. In the absence of this expenditure data from the study survey, information from other sources on expenditure levels or other indicators of household living standard can be inserted on this worksheet (e.g. poverty line or household expenditure estimates from other sources). The quintiles specified require that households should be put in one of five levels or categories of living standards. If the number of categories into which households are to be placed is more or less than five, some adaptation will be required. If the number of categories is less than five, the same format can be used but some of the rows would not be used. If the number of categories is larger than five, more rows would have to be added and some adaptation would be needed to the rest of the table.

The last worksheet is the *Calculation of compensation*[68] which includes relationships between the base unskilled wage rate and wage costs of other workers and site management and programme costs. This is required to make an estimate of the overall programme costs. The parameters on this worksheet would have to be modified to reflect the situation on the programme for which the exercise is being carried out.

[68] Adapted with grateful acknowledgement from the ILO International Training Centre (ITC) Innovations in Public Employment Programmes (IPEP) course material.

8. Complementary considerations

Because of the nature of the issues addressed by the guide, it has been more focused on the safety net objective than the public asset improvement objective though the implications for wage rates of LB public works have been discussed in the previous section. In this section, we introduce some complementary considerations with an emphasis on the asset improvement objective. Ensuring satisfactory and balanced performance on the twin objectives of safety net provision and asset creation or preservation is challenging, especially since very often such programmes are implemented in contexts in which institutions and technical capacities are weak. PEPs require a combination of adequate resources, appropriate management structures, effective planning and implementation and adequate technical inputs. Detailed examination of these aspects is beyond the scope of this guide. However, we provide an overview of the main aspects, especially where they are related to the wage rate, labour supply and effective use of labour.

At a broad level, the cost effectiveness of public works programmes as a safety net instrument is measured for possible comparison with other safety net devices by estimating the cost of delivering $1 of benefit to the poor. Ravaillon (1999) includes the following four variables in making the calculation:

- labour intensity (the share of the wage bill in total cost);
- targeting performance (the proportion of wages paid to the poor);
- net wage gain (gross wages minus all costs of participation incurred by workers), and
- indirect benefits flowing from the assets created.

The calculation showed that the cost of transferring $1.0 to poor people through public works in a low income country with an average poverty rate of 50 per cent would be $2.5 if some allowance is made for future gains from assets created.

However, the above conclusion on the apparently high cost of social protection for the poor through public works should be subjected to two qualifications: (a) comparison with the costs of other safety net instruments, and (b) providing adequate weight to the asset creation aspects of PEPs. In a comparison of targeting effectiveness of alternative approaches for transfers to the poor, Coady et al (2004) found that public works programmes perform well in comparison with other options.

Further, the underlying assumption in the Ravaillon calculation is that the prime objective of the PEP is making an income transfer to the poor and the non-labour expenditure on asset construction or maintenance is a cost that has to be endured with limited benefits from the asset improvement or maintenance. While an allowance is made for the indirect benefits of the asset creation, there is an implicit assumption that the asset improvement would not have been justified in the absence of the PEP. If LB works are undertaken because: (a) they are the most cost-effective approach to implementing a planned programme of works; (b) they are justified on economic and developmental grounds, and (c) they would have been implemented irrespective of the safety net function they fulfil, the opportunity cost of delivering every $1.0 to the poor would be lower. It is now generally accepted that well designed PEPs with adequate management and technical support form an important part of a social protection strategy for the poor (Subbarao et al, 2013).

Moving on to more specific programme implementation issues, clear communication of policy objectives and implementation arrangements to the programme and project implementers and to the beneficiaries are essential. With respect to dealing with participants, effective and efficient payment arrangements are required for three main reasons. The first is that if the payment is not according to the agreed wage rate, the programme objective of supplementing the incomes of poor households is not fully met. The second is that to the extent that the full wage does not reach the participants because of leakages, the cost-effectiveness of targeting the poor through the programme is reduced. The effectiveness is further eroded by the undermining of confidence in the scheme by target groups and therefore unwillingness to participate.

The third is the impact of the disincentive effect of deficient payment arrangements on the asset creation or maintenance objective. To achieve acceptable levels of productivity and quality, the payment should be conditional on the amount of work done, either through piece rate or task rate. However, operating an incentive system requires adequate supervision. If actual payments are less than the agreed payments, productivity and quality will suffer. Delays and uncertainty associated with payment will also have negative effects.

To make sure that access to the PEP is open to all who qualify, it is important to ensure that the intended beneficiaries are fully informed about the programme, the conditions for participation, work requirements and the procedures for participation are transparent and monitored. Additional efforts are usually needed to ensure that women and disadvantaged groups have adequate access to the programme.

There should be no discrimination in access to PEP projects and pay between men and women. Administrative and practical obstacles against women's participation should be avoided and the principle of "equal pay for work of equal value" should be applied[69]. Further, some positive measures may be needed to overcome barriers against female participation. Forms of work organization and payment arrangements such as task-based payment and assigning specific types of tasks to women may help in this respect. Provision of childcare or pre-school services can improve participation by women. Other measures may be required to address cultural barriers against women's participation and finding ways in which women can determine the types of activities which are of priority to them and in which they would feel comfortable participating. Setting incentives for the implementers to meet targets on participation by disadvantaged groups and auditing procedures for checking if there are any obstacles to participation should also be considered.

It is possible that the stated willingness to participate in a PEP and the acceptable wage rate in response to survey questions may be influenced by past experience with public works projects. If the experience has been unfavourable (e.g. because of very low pay, delays in payment or poor working conditions and organization), this may be reflected in the survey responses. FGDs are a good way of providing some initial indication of such problems. A question in the survey could also be included if this is considered necessary.

For the asset improvement objective to be effectively met, paying an adequate wage rate regularly and on time are necessary but not sufficient. The projects should have the required technical inputs and competent management. On the technical side, there are two aspects. First, it is necessary to establish and apply norms and designs and to provide

[69] Tajgman and de Veen (1998) provide further details on policies and practices for ensuring equal opportunities and pay.

technical inputs for: (a) designing projects and estimating inputs and costs, and (b) providing technical guidance and supervision during implementation for quality and cost control. Second, it is necessary to determine what complementary inputs (good quality tools, light equipment and materials) are required and to ensure their provision.

A PEP may have LI and LB components, each suitable for different types of projects. The LI approach will typically be more appropriate for smaller village level and sub district works (e.g. village roads and communal ponds) and the LB approach for larger rural infrastructure works (e.g. tertiary roads, small scale irrigation and flood protection) requiring more technical input. It was noted earlier that LB works may require a higher efficiency wage because LB workers will be required to work under closer supervision, work to more exacting standards and achieve higher productivity than workers on LI projects. Therefore, it may be necessary to differentiate between LI and LB components with respect to the wage rate. For such differentiation to be acceptable, it should be shown to be clearly justifiable and defensible on the grounds of nature of work and implementation mode.

An approach to achieving the differentiation between LI and LB components is outlined here. The first element of differentiation is the types of infrastructure works to be undertaken by LI and LB methods, the larger works to be LB and smaller projects for the benefit of the local community to be LI (see section 2). Typically, LB works will be planned development investment projects and maintenance undertaken by ministries and local government agencies. As noted earlier, such planned investment and maintenance would have been implemented irrespective of the need for the safety net and therefore the cost of provision of the safety net through them would be lower.

The differentiation between LI and LB components would require a consistent system of classification of local infrastructure, an inventory of existing infrastructure assets, listing of new projects and clear criteria for determining which types of works are appropriate for LI and LB approaches and agencies responsible for managing and implementing them. Ideally, the management, supervision and implementation of public works should be devolved to different levels of administration and down to the local community level depending on the type and level of projects. For the LI approach for works at the sub-district and village levels, while devolvement of management and implementation is appropriate, typically implementation capacities at these levels are limited and therefore considerable effort may be needed to develop these capacities. Additional requirements are management and technical support from higher level administration and a well functioning institutional structure for supporting and monitoring the administrative and technical implementation.

The second element of differentiation between LI and LB components is the mode of implementation. The mode of operations for LI could be direct labour or decentralized community based works through community contracting. The mode of implementation for LB components could be through direct labour though operating through private contractors. Although private contractors for LB components have beengenerally preferred, more recently there has also been evidence that for other timet efficiency and reasons related to land rights, in some cases, community contracting has been preferred. Use of contractors for implementing public works projects offers a number of advantages which include effective implementation when public sector capacity is limited and efficiency improvements resulting from competition and incentives. However, the wage rate issue for parts of PEPs with contractor operation is more complex. The PEP wage rate can be stipulated and monitored for direct labour and community contracting. Under contractor operation for LB works, contractors could be free to set the wage rate taking account of local labour market and efficiency wage considerations. Generally the efficiency wage consideration would lead to a wage rate higher than the wage rate required for LI projects, especially if contracts are well implemented under effective supervision.

There are some possible risks with contractor operations. The first is exploitation of workers through very low wages and harsh working conditions. The second is contractors employing their own labour gangs to keep labour costs down and / or because of their familiarity with an established gang of workers, thus reducing the number of target beneficiaries employed in a locality. The third is contractors avoiding using the labour-based approach and using equipment instead if they are more familiar with equipment based methods or to reduce labour management problems. All these risks can be mitigated by setting appropriate contract conditions, effective training and supervision of implementation. The contracts could: (a) stipulate that the wage rate cannot be lower than a specified level but contractors should be free to pay more and offer better conditions if they see fit; (b) set down the criteria for selection of workers to ensure that the target beneficiaries are employed, and (c) specify the labour and equipment mix to be used with provision for any adjustments as required. Monitoring and supervision would be required to ensure that the stipulations are followed. The differentiation between LI and LB components and programmes in: (a) the types of projects undertaken; (b) whether they are of direct benefit to the population in a locality or of wider benefit, and (c) the mode of operation makes it possible to differentiate on wage rates between the two types of components while avoiding competition between them.

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Annex I: Conducting focus group discussions

Summary of selected findings from Focus Group Discussions (FGDs) conducted as a part of the Cambodia wage rate study

This Annex is included as an illustration of the types of results to be expected from FGDs and supplements the guidance on conducting FGDs in section 5.2.

The purposes of the FGDs in this study were to: (a) assist in finalizing the household survey questionnaire, and (b) provide a qualitative context and insights for interpreting the results of the household survey. Since the aim of the study was to make an assessment of the appropriate wage rate and labour availability for public works employment, the FGDs sought broad understanding of the importance of unskilled wage employment and other sources of cash income for households in the villages and how such income was used. This also required some discussion of the characteristics which distinguish between poor, average and better off households and differences between them in the importance of wage income.

Other aspects discussed were:

- types and location of unskilled wage employment available and taken up by people from the village and any exchange of labour arrangements between households;
- wage rates and payment arrangements;
- seasonality of labour requirement in farming and availability for off-farm work;
- local experience of public works employment and views of participants on public works;
- acceptable wage rates and employment conditions for public works;
- how households accommodate some members taking up wage employment and the pros and cons of employment locally and further away, and
- participation by women and the young in wage employment and public works programmes.

The rest of this sub-section and the table summarize findings from the FGDs which were undertaken in four villages, one in each region in October 2009. In summary, members of most households engage in a range of economic activities and have multiple livelihood sources. Those with land are typically busy in ploughing, rice planting and transplanting between June and August and harvesting during December to February. Even for households without land there is work in rice fields during these times in their own villages or in nearby villages. Generally people are available for off-farm work between October and April though there are some variations between villages as the summary table indicates. Notably, in Babaong village in the Mekong region, dry season rice is cultivated between October and April which makes this the busiest time of the year.

Economic activities and cash earning opportunities other than in farming vary between the villages reflecting the features of their regions. In Andong Trach, the alternatives are fishing, work in vegetable plantations along the border with Thailand and urban jobs. In Babaong, they are local jobs in rice cultivation, carrying rocks, as security guards, in small businesses (e.g. shops and battery charging) and urban jobs (housemaids and garment factory workers in Phnom Penh). In Khhan Chor, the alternatives are work in rubber plantations, forestry, carpentry and construction as well as urban jobs further afield. In Kampong Thnaot, they are sea fishing and work in salt pans.

There has been a tradition of labour exchange between households in rural areas but recently there has been preference for working for payment in cash or kind. In Andong Trach and Kompong Thnaot, the wage rate for agricultural labour was $2.4 per day[70]. In Khhan Chor, it appears to be in the $2.4 to $2.8 range while in Prey Veng, it appeared to be in the $2.4 to $3.6 range. Other local work opportunities and proximity to Phnom Penh are possible explanations for the somewhat higher wage rates in Babaong (Mekong region). In Khhan Chor (Platea / Mountain region), there are opportunities in commercial farms (rubber plantations), timber haulage and processing and other forestry related activities.

For members of poor and average households, employment outside farming is essential for supplementing their livelihoods. For average and better-off households, it provides cash to improve their livelihoods by acquiring livestock and productive assets (e.g. for the farm or fishing) and buying stock for trading. Unemployed youth and lack of opportunities for women were also identified as problems. Three out of the four villages (the exception being Khhan Chor in Kratie Province, Plateau / Mountain region) had experience of public works under the World Food Programme (WFP) in the 1990s. In all four villages, there appeared to be willingness to participate in a public works programme offering employment near the village during the slack agricultural season.

In Andong Trach and Kompong Thnaot, wage rates for public works similar to agricultural wage rates were thought to be acceptable by FGD participants. In the other two villages, acceptable wage rates were thought to be somewhat higher partly reflecting labour market conditions and partly the cost of living. In Khhan Chor, the participants thought that public works wage rates for men would have to be significantly higher than for women[71], possibly reflecting higher earnings of men in alternative activities.

In all four villages, the main features distinguishing poor, average and well-off households were ownership and amount of land owned, ownership and quality of productive assets (e.g. fishing boats) and operation of businesses. Members of poorer and landless households rely on wages from unskilled labour near their homes and further away while better off households rely more on farming and businesses.

There is preference for local jobs because such jobs can be combined with other chores in the home and on the farm. However, there is also migration, especially by the young to seek jobs away from home. Younger people migrating to Phnom Penh to work in the garment sector was commonly cited as an example of migration, though its importance varied between villages. Other urban jobs were security guards and working as waiters and waitresses. Unemployed youth and lack of opportunities for women were identified as problems. Local employment opportunities during the slack agricultural season were considered to be important for women and the young but were in short supply.

[70] The discussion on wage rates was in the local currency but converted to US$ equivalent for this guide at $1.00 = 4,215 Riel.

[71] Note that this Annex reports on the findings from the FGDs reflecting the situation in the villages and the views of the participants. Employment on PEPs should not discriminate between men and women. See Section 8 for discussion of this issue and the steps that can be taken to ensure equity.

Annex I Table: Summary of selected findings from FGDs in Cambodia study

Region	Tonle Sap	Mekong Plain	Plateau / Mountain	Coastal
Village	**Andong Trach**	**Babaong**	**Khhan Chor**	**Kompong Thnaot**
Economic activities (sources of cash income)	*Wage employment:* • Migrant workers in farms and market gardens along Thai border (about 30% of households). • Rice field workers (rice transplanting and harvesting) in the village and nearby villages (within 4-5km) • Young women working as housemaids in Battambang and Phnom Penh – mostly young women (15-25 year-old). *Other income sources:* Farming including livestock, fishing and small businesses.	*Wage employment:* • Rice field workers. • Maize harvesting in Thailand. • Portering. • Rock transporting. • Urban jobs (in garment factories, restaurants, security). *Other income sources:* Small businesses (battery recharging, tire fixing, coffee shops, trading), fishing, farming including rearing and selling livestock.	*Wage employment:* Rubber plantations. Rice field workers. Wood processing and carpentry. Domestic service. *Other income sources:* Farming including livestock, fishing and small businesses.	*Wage employment* • Rice field workers (rice transplanting and harvesting) – 10 to 20% of households rely on this heavily. • Salt field worker (about 5% of households) • Migrant workers (fishing -very few) • Young women working as housemaids in Phnom Penh (very few). *Other income sources:* Farming (staple crops, livestock and a few growing peanuts, corn and watermelon), seafood fishing (80% of total households but mostly men) and small businesses (mainly women - very few).
Unskilled wage employment and wage rates	Migrant workers along the Cambodian – Thai border and rice field workers within and nearby villages are paid $2.4 per day.	In the village and other villages nearby, people can earn between $2.4 and $3.6 per day as rice field workers depending on the season. Wages in other employment: maize harvesting in Thailand - $3,6 to $4.7 per day; construction - $3.6 per day; garment factories - minimum wage $50 a month, average earnings $70 per month; rock transporting - $3.6 to $7.1 per day; rice portering - between $4.7 and $9.5 per day; security guards – $50	Unskilled workers earn between $2.4 and $2.9 plus food. Workers on rubber plantations earn $36 per month plus 10kg of rice. Unskilled workers can earn up to $1,000 per month in Korea and household workers can earn $160 in Malaysia while in Cambodian villages, household workers can only make $36 per month. Men's earnings are higher than	The payment arrangements for salt field workers are based on the amount of work done. On average, each worker can earn $2.4 per day (work from 3.00 – 7.00 am). Rice field workers are paid $2.4 per day. However, if workers ask for advance payment from rice farmers (about 3 – 6 months in advance), they could earn only $1.2 – $1.7 per day. Both women and men work and are paid equally. Migrants go to Kampong Soam and Koh Kong

		to $60 per month; restaurant waiters – $50 a month plus food.	women's because of higher productivity in physical work, for example, in land clearing for rubber plantations, men can earn $3.6 while women typically earn $2.8 per day.	to work as fishermen and usually return home once a month (15 – 28 days) with $90 to $150 equivalent in Thai Baht.

Annex I Table: Summary of selected findings from FGDs in Cambodia study (continued)

Region	Tonle Sap	Mekong Plain	Plateau / Mountain	Coastal
Village	**Andong Trach**	**Babaong**	**Khhan Chor**	**Kompong Thnaot**
Seasonality in labour requirements in farming	Labour requirements for rice cultivation are heavy for: • Ploughing: June – July • Transplanting: July – October • Harvesting: December – February Fishing is during September to December and workers are required on farms along the border with Thailand during August to September and November to December.	Labour requirement in farming is heavy during the dry season (October to April) for dry season rice.	People in the village are very busy during the rainy season in preparing for rice planting (June – July). October to November in transplanting rice seedlings and transporting wood and harvesting rice in January. Available for more wage employment to supplement household livelihoods at other times.	Labour requirements for rice cultivation are heavy for • Ploughing: June – July • Transplanting: Mid July – Mid August • Harvesting: Mid December – Mid January Other requirements are whole year round for seafood fishing and work in salt fields during October to April.
Acceptable wage rates in public works	If public works employment is available in or near the village, especially during the dry season (May – June), villagers would be willing to participate at a wage rate slightly lower than in farming (i.e. below $2.4 per day). Payment in cash is preferable to payment in kind.	The acceptable wage rate for public works indicated by participants was higher than the agricultural wage rate - between $3.6 and $4.7 per day. The current high prices of essentials were given as a reason. The best time for public works is May to October. Preference is for payment in kind, mainly rice between October and February because of shortage of rice during that period but payment in cash at other times.	Participants made a distinction between wage rates for men and women. For men, the wage rates were in the $4.7 to $7.1 range. For women, the wage rates were $2.4 (with food) to $2.9 (without food). The participants from well-off and average household prefer payment in cash while participants from poor households prefer in-kind payment, especially rice.	All participants in the FGD claimed that if public works are available in the village, especially after the rice harvesting season (April – June), villagers would be willing to participate and would prefer the payment in kind (information on acceptable wage rates was not obtained).

Annex I Table: Summary of selected findings from FGDs in Cambodia study (continued)

Region	Tonle Sap	Mekong Plain	Plateau / Mountain	Coastal
Village	**Andong Trach**	**Babaong**	**Khhan Chor**	**Kompong Thnaot**
Wage employment and implications for other activities	Participants claimed that wage employment does not burden other family members since workers return home during the busiest agricultural season to help in rice transplanting and harvesting. They send money to hire labour if necessary if they are not able to return. Local employment is preferred because of lower travel costs and possibility of combining wage employment with other commitments.	During the busy season (October – April) participants prefer wage employment within the village so they can participate in harvesting and other farming activities. Even during the busy season, people would be willing to take on wage employment if the wage rate is high enough and hire others to help with farm work. In the agricultural slack season (May – October), the burden on the rest of the household of wage employment by some members is low. There is preference for working near the village but there is willingness to go further afield for higher wages. There are also concerns about safety and vulnerability when household members, especially women, have to work away from home.	The participants preferred employment in the village to work away from it because they can stay close to the family and save money required to travel and rent accommodation if jobs are further away. All participants said that villagers had a need for wage employment to supplement their livelihoods.	Wage employment undertaken by most villagers is in the village. Working in the village saves the cost of transport and leaves time for household activities. Participants stressed that earnings from working in the village were similar to earnings from work further away. There is also fear of being cheated, getting sick away from home and the cost of travelling and living away from home.
Participation by women and young	Women are willing to participate in wage employment and public works in or near the village. Young women thought that there were no barriers against their participation in public works and other employment opportunities. Young people of both sexes expressed their desire to stay in their own village, rather than leave.	Women participants felt that they have the same opportunities in obtaining jobs and self-employment as men. Women are willing to join any project to earn money. However, they feel that some jobs such as excavation are too heavy for them. With regard to youth employment, the deputy chief of the village said that around 70 per cent of the young are unemployed. Some have to go to urban areas for jobs.	All female participants revealed that all women in the village want to and are able to work for waged public works or other employment. Also, all young men and women just need to work to survive because there are very few jobs in the village outside the harvesting season.	Women participants in the FGD claimed that they are willing to participate in wage employment and public works in or near the village. They do not have enough job opportunities and do not go fishing. Married women can combine housework with other employment.

Annex II: CARD / ILO Survey Questionnaire, Cambodia study

This Annex is included as an example of a questionnaire which could be used for a wage rate and labour supply study for a public works based PEP and complements section 5.3 (Conducting a survey: Tasks and options) and 5.4 (Designing the questionnaire). The specific requirements in other contexts may vary but this questionnaire can be used as a template to be adapted to suit requirements.

HOUSEHOLD QUESTIONNAIRE

PART 1

1. Household Information - Location Identification		Code
1.1. Province		
1.2. District		
1.3. Commune		
1.4. Village		
1.5. Name of Head of Household		
2. Enumeration Particulars	1. Enumerator	2. Supervisor
2.1. Name		
2.2. Date of interview and supervisor check (day/month/year: i.e. 08/10/2009)		
2.3. Signature		
3. Data Entry		
3.1. Name		
3.2. Date of data entry (day/month/year: i.e. 08/10/2009)		
3.3. Signature		
4. Number of persons in household[72] (all members including children aged 0-14)		
4.1. Male		
4.2. Female		
4.3. Total		

- [72] A household was defined as a group of persons who commonly live together and would take their meals from a common kitchen unless the need to be away from the household for work prevented any of them from doing so. In order to be counted as a household member the person has to have been present in the household in the last six months. "Regular" households exclude institutional households (e.g. boarding houses, hotels, pagodas and jails), homeless households or other transient households (such as people living on boats).

PART 2

People who normally live in this household[73] (15 years old and above)				
2.1. Person number	2.2. Name	2.3. Age *On last birthday (years)*	2.4. Sex Male = 1 Female = 2	2.5. Relationship to the head of household[74]
1				1
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Code: Question 2.5: 1= Household head, 2= Husband/wife, 3= Sister-/brother-in-law, 4= Son or daughter, 5= Son-/daughter-in-law, 6= Grandchild, 7= Stepchild , 8= Parent, 9= Grandparent, 10= Niece/Nephew, 11= other (specify)

This question is needed to identify all those who are currently in the hh and especially those who are 15 years old or older. We need to ensure that each person's age and other characteristics can be directly linked with each person's economic activities in the later questions.

[73] See definition on page 1.

[74] ***Person 1 to be the head of hh***. Definition of head of household for the 1998 population census: "a person who is recognised as such in a household. He or she is generally the person who bears the chief responsibility for the management of the household and takes decisions on behalf of the household. Head of household is not necessarily the eldest male member, but may be a female member or a younger member of either sex."

PART 3: This section covers activities of household members aged 15 and above in the last seven days, unemployment and non-economic activities. *Ask for all household members aged 15 and above (preferably, each person should answer the questions about his/her economic activities in section 3).*
Read out: **Now I am going to ask some questions about activities in the last seven days for each household member aged 15 and above.**

3.0	**Start with the first person 15 years old or older, put in that person's number from the first column on previous page (Part 2) and get responses to 3.1 to 3.20 for that person. Then do the same with the second person 15 years or older and so on until responses have been received for each person in the household 15 years old or older.**						
3.1	**In the last seven days, did …[Name]… do any of the following activities, even for only one hour?** *Show prompt card 1.*[75]	**Yes=1 No =2**	**Yes=1 No =2**	**Yes=1 No =2**	**Yes=1 No =2**	**Yes=1 No =2**	**Yes=1 No =2**
3.1.1	**Run or do any kind of business, big or small, for himself / herself or with one or more partners?**						
3.1.2	*If the answer to (3.1.1) is "Yes", indicate number of hours during the last 7 days.*						
3.1.3	**Do any work for a wage, salary, commission or any payment in kind?**						
3.1.4	*If the answer to 3.1.3 is "Yes", indicate number of hours during the last 7 days.*						
3.1.5	**Help unpaid in a household business of any kind?**						
3.1.6	*If the answer to 3.1.5 is "Yes", indicate number of hours during the last 7 days.*						
3.1.7	**Do any work on his/her own or the household's farm, growing farm produce or in looking after animals for the household?**						
3.1.8	*If the answer to 3.1.7 is "Yes", indicate number of hours during the last 7 days.*						
3.1.9	**Do any construction or major repair work on his/her own home, farm or business, or those of the household?**						
3.1.10	*If the answer to 3.1.9 is "Yes", indicate number of hours during the last seven days.*						
3.1.11	**Catch any fish, prawns, shells, wild animals or other products for sale or household use?**						
3.1.12	*If the answer to 3.1.11 is "Yes", indicate number of hours during the last 7 days.*						
3.1.13	**Other. Please specify in the space below.**						
3.1.14	*If the answer to (3.1.13) is "Yes", indicate number of hours during the last 7 days.*						
3.1.15	*Brief explanation of "(3.1.13) Other"*						

If "YES" for a person to any part of Question 3.1 → Go to Q 3.4 for that person. **If "NO" to all options for a person, continue with next question.**

[75] A prompt card showing the activities in 3.1 may be used.

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).						
3.2	*If the answer is "NO" to all parts of Question 3.1 for a person, ask:* **Even though ..[Name].. did not do any of these activities in the last seven days, does he/she have a job, business, or other economic or farming activity that he/she will definitely go to?** 1 = YES 2 = NO → ***Go to Q 3.8***						
3.3	**What was the main reason ..[Name].. was absent from this activity in the last seven days?** ***Mark only one reason.*** 01 = OWN ILLNESS OR INJURY 02 = CARING FOR FAMILY OR OTHERS 03 = OTHER FAMILY/COMMUNITY OBLIGATIONS (E.G. FUNERALS, MEETINGS) 04 = PROBLEMS WITH TRANSPORT 05 = BAD WEATHER 06 = VACATION, LEAVE 07 = STUDY OR TRAINING 08 = OTHER REASON						
	Brief explanation of "08 = OTHER REASON"						
3.4	**What is the type of ..[Name]..'s main place of work?** 01= GOVERNMENT (INCLUDING POLICE, MILITARY, TEACHER) 02= UN ORGANIZATION 03= NGO (PAID OR VOLUNTARY) 04= EMPLOYMENT IN PRIVATE SECTOR 05= SELF EMPLOYMENT – WORKING IN OWN BUSINESS INCLUDING PARTNERSHIP 06= SUBSISTENCE FARMING, FISHING OR OTHER 07= LOOKING FOR WORK AND AVAILABLE TO START WORK 08 = OTHER REASON						
	Brief explanation of "08 = OTHER REASON"						

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).								
3.5.1	**What is ..[Name]..'s daily pay or earnings at his/her <u>main</u> job or business?** *(Note: Normally, such information will not be available for some activities, e.g. work on family farm.)*		**Amount**						
3.5.2	*Give amount in figures indicating units (Riel or $ for cash, commodity and amount if payment is in kind).*		**Units**						
	***If reluctant to answer or not sure about the exact amount → Go to Q* 3.7**		**No answer**						
3.6	***Ask only if an amount is given in Q 3.5*** **Is the pay ….** • 1= PER DAY • 2 = PER WEEK 3 = PER MONTH								
3.7	***Ask only if reluctant to answer or not sure about the exact amount in Q 3.5.*** *Show the categories. Make sure the respondent points at the **correct income column** (daily, weekly or monthly) on **prompt card 2 (if prompt cards used)** and mark the applicable code.*								
		Daily	**Weekly**	**Monthly**					
	01	R 0 - 3000	R 0 – 15000	R 0 - 66000					
	02	R 3001 - 6000	R 15001 - 30000	R 66001 - 132000					
	03	R 6001 - 9000	R 30000 - 45000	R 132001 - 198000					
	04	R 9001 - 12000	R 45001 - 60000	R 198001 - 264000					
	05	R 12001 - 15000	R 60001 - 75000	R 264001 - 330000					
	06	R 15001 - 18000	R 75001 - 90000	R 330001 - 396000					
	07	R 18001 - 21000	R 90001 - 105000	R 396001 - 462000					
	08	R 21001 - 24000	R 105001 - 120000	R 462001 - 528000					
	09	R 24001 - 27000	R 120001 - 135000	R 528001 – 594000					
	10	R 27001 - 30000	R 135000 – 150000	R 594001 – 660000					
	11	MORE THAN R 30000	MORE THAN R 150000	MORE THAN R 660000					

→ Go to Q 3.16

The following questions cover unemployment and non-economic activities followed by employment seeking and last employment.
Ask for all household members aged 15 and above who did not work and were not absent from normal work in the last seven days (i.e. for all those whose answer on Q 3.2 = 2).

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).						
3.8	**Why did ..[Name].. not work during the past seven days?** • 01 = HAS FOUND A JOB, BUT IS ONLY STARTING AT A DEFINITE DATE IN THE FUTURE → ***Go to Q 3.16*** 02 = SCHOLAR OR STUDENT AND PREFERS NOT TO WORK 03 = HOUSEWIFE/HOMEMAKER AND PREFERS NOT TO WORK 04 = RETIRED AND PREFERS NOT TO SEEK FORMAL WORK • 05 = ILLNESS, INVALID, DISABLED OR UNABLE TO WORK 06 = TOO YOUNG OR TOO OLD TO WORK 07 = LACK OF SKILLS OR QUALIFICATIONS FOR AVAILABLE JOBS 08 = CANNOT FIND ANY WORK 09 = CANNOT FIND SUITABLE WORK (SALARY, LOCATION OF WORK OR CONDITIONS NOT SATISFACTORY) • 10 = OTHER REASON						
	Brief explanation of "10 = OTHER REASON"						
3.9.1	**During the past four weeks, has ..[Name].. taken any action** • TO LOOK FOR ANY KIND OF WORK • 1=YES • 2=NO						
3.9.2	**During the past four weeks, has..[Name].. taken any action** • TO START ANY KIND OF BUSINESS • 1=YES • 2=NO						
3.10	**Has ..[Name].. ever worked before for payment in cash or kind (other than on the family farm)?** • 1 = YES • 2 = NO → ***Go to Q 3.15***						

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).					
3.11	**How long ago was it since ..[Name].. last worked (other than on the family farm)?** 01 = 1 week - less than 1 month 02 = 1 month - less than 3 months 03 = 3 months - less than 6 months 04 = 6 months - less than 12 months (1 year) 05 = 1 year - less than 3 years 06 = 3 years or more 888 = Don't know					
3.12.1	**What is ..[Name]..'s daily pay or earnings at his/her <u>previous</u> job or business?** *(Note: Normally, such information will not be available for some activities, e.g. work on family farm.)*	**Amount**				
3.12.2	*Give amount in figures indicating units (Riel or $ for cash, commodity and amount if payment is in kind).*	**Units**				
	***If reluctant to answer or not sure about the exact amount → Go to Q* 3.14**	**No answer**				
3.13	***Ask only if an amount is given in Q 3.12.*** **Is the pay ….** • 1= PER DAY • 2 = PER WEEK 3 = PER MONTH					
	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).					
3.14	***Only if reluctant to answer or not sure about the exact amount in Q 3.12*** ***Show the categories. Make sure the respondent points at the correct income column (daily, weekly or monthly) on prompt card 2 (if prompt card used) and mark the applicable code.***					

		Daily	Weekly	Monthly					
	01	R 0 - 3000	R 0 – 15000	R 0 - 66000					
	02	R 3001 - 6000	R 15001 - 30000	R 66001 - 132000					
	03	R 6001 – 9000	R 30000 - 45000	R 132001 - 198000					
	04	R 9001 - 12000	R 45001 - 60000	R 198001 - 264000					
	05	R 12001 - 15000	R 60001 - 75000	R 264001 - 330000					
	06	R 15001 – 18000	R 75001 - 90000	R 330001 - 396000					
	07	R 18001 - 21000	R 90001 - 105000	R 396001 - 462000					
	08	R 21001 - 24000	R 105001 - 120000	R 462001 - 528000					
	09	R 24001 – 27000	R 120001 - 135000	R 528001 – 594000					
	10	R 27001 - 30000	R 135000 – 150000	R 594001 – 660000					
	11	MORE THAN R 30000	MORE THAN R 150000	MORE THAN R 660000					

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).						
3.15.1	**How does …[Name]… support him/herself?** • a. DID ODD JOBS DURING THE PAST SEVEN DAYS • 1 = YES 2 = NO						
3.15.2	**How does …[Name]… support him/herself?** • b. SUPPORTED BY PERSONS IN THE HOUSEHOLD 1 = YES 2 = No						
3.15.3	**How does …[Name]… support him/herself?** • c. SUPPORTED BY PERSONS NOT IN THE HOUSEHOLD 1 = YES 2 = No						
3.15.4	**How does …[Name]… support him/herself?** d. SUPPORTED BY CHARITY, CHURCH, WELFARE, ETC. 1 = YES 2 = No						
3.15.5	**How does …[Name]… support him/herself?** • e. SAVINGS OR MONEY PREVIOUSLY EARNED 1 = YES 2 = No						
3.15.6	**How does …[Name]… support him/herself?** • f. BORROWING 1 = YES 2 = No						
3.15.7	**How does …[Name]… support him/herself?** g. OTHER SOURCES 1 = YES 2 = No						
	Brief explanation of "g = OTHER SOURCES"						
	If "YES" to response 3.15.1.a *→ Go back to Q 3.1 for that person since response implies that some work was done by the person in the last seven days.*						

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).						
3.16	**If a suitable job at acceptable pay becomes available, will ..[Name].. accept it?** 1 = YES 2 = NO 888 = DON'T KNOW *IF "2 = NO" OR "888 = DON'T KNOW"* **→ *Go to Q 3.18***						
3.17	**If ..[Name].. takes up new employment, what will happen to work and other activities he/she is currently doing?** 01 = NO ACTIVITIES OR PAID WORK AT PRESENT 02 = COMBINE NEW EMPLOYMENT WITH CURRENT ACTIVITIES 03 = GIVE UP CURRENT PAID EMPLOYMENT 04 = OTHER FAMILY MEMBERS TO DO MORE HOUSEHOLD CHORES AND WORK ON FARM 05 = ANOTHER FAMILY MEMBER TO TAKE UP CURRENT PAID EMPLOYMENT 06 = OTHER *(Note: More than one response possible, though 01 is not consistent with 02 to 06.)*						
	Brief explanation of "06 = OTHER REASON"						
3.18	**If manual work in road improvement, such as digging earth or hauling it, is offered locally at R5000 per day, would …[Name]… be willing to take it up?** 1 = YES ***→ Go to Q3.0 for next person in household 15 years or older. Go to 5.0 if section 3 has been completed for all persons 15 years or older.*** 2 = NO						

	Number for each person 15 years old or older to be entered from Part 2 (see 3.0 above).						
3.19	**If manual work in road improvement, such as digging earth or hauling it, is offered locally at R9000 per day, would …[Name]… be willing to take it up?** 1 = YES ***→ Go to Q3.0 for next person in household 15 years or older. Go to 5.0 if section 3 has been completed for all persons 15 years or older.*** 2 = NO						
3.20.1	**What is the minimum acceptable pay for such work (i.e. manual work in road improvement, such as digging earth or hauling it, for …[Name]…** *Give amount in figures, indicating whether it is per day, per week or per month.*						
3.20.2	*If the response is "*NO PAY ACCEPTABLE*", "*REFUS TO ANSWER*" **or** "*DON'T KNOW*", INDICATE BELOW.* 1 = NO PAY ACCEPTABLE 2 = REFUSE TO ANSWER 888 = DON'T KNOW						

Part 4

4.1. Since May 2009, have you faced any of the following crises? (Household-Level)

		1=YES 2=NO	If YES, how much was spent? (in 10,000 riel)	Remarks
4.1.1	Loss of household member (number :……)			
4.1.2	Household member became very sick/was badly injured			
4.1.3	Fire			
4.1.4	Crop failure			
4.1.5	Crop damage due to flooding			
4.1.6	Other damage due to flooding			
4.1.7	Animal deaths/theft			
4.1.8	Theft or being cheated			
4.1.9	Household member lost waged employment			
4.1.10	Household member earned money less than before due to losing job or less hours of work available			
4.1.11	Business shutdown			
4.1.12	Land Conflict			
4.1.13	Other (specify :……)			

		1=YES 2=NO	If yes, how much was spent? (in 10,000 riel)	Remarks
4.2.1	Spent savings			
4.2.2	Reduced consumption			
4.2.3	Borrowed money			
4.2.4	Sold cattle			
4.2.5	Sold transport, farm or household equipment			
4.2.6	Rented out land			
4.2.7	Sold residential land/house			
4.2.8	Sold agricultural land			
4.2.9	Got help from relatives/friends			
4.2.10	Got help from NGOs			
4.2.11	Household member(s) migrated to look for jobs			
4.2.12	Placed children in labour service			
4.2.13	Other (specify: .....)			

Note: If all answers 2= No; end of interview

4.2. How did your family cope with the incident(s) above? (Multiple answers permitted)

		1=YES 2=NO	If yes, how much was spent? (in 10,000 riel)	Remarks
4.2.1	Spent savings			
4.2.2	Reduced consumption			
4.2.3	Borrowed money			
4.2.4	Sold cattle			
4.2.5	Sold transport, farm or household equipment			
4.2.6	Rented out land			
4.2.7	Sold residential land/house			
4.2.8	Sold agricultural land			
4.2.9	Got help from relatives/friends			
4.2.10	Got help from NGOs			
4.2.11	Household member(s) migrated to look for jobs			
4.2.12	Placed children in labour service			
4.2.13	Other (specify: .....)			

End of interview: Thank the respondents!

5	***Indicate the column number(s) of the person(s) who answered all or most of the questions.***	

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