

Report on Work Norms and Wage Rates for Food Assisted Works in Bangladesh

Part I of the Report

A study undertaken for the Government of Bangladesh, World Food Programme, the USAID-funded CARE/Integrated Food for Development Project, and European Union/Integrated Food Assisted Development Project
Dhaka, May, 1997

Report on Work Norms and Wage Rates for Food Assisted Works in Bangladesh

Part I of the Report

Prepared by

Mike Shone
Engineering and Planning Consultant
Adelaide, Australia

David Tajgman
Jurist and Socio-Economist
Labour in Development
Aarhus, Denmark

Survey enumerated by

House of Consultants, Ltd.
Dhaka, Bangladesh

EXECUTIVE SUMMARY

I. THE OBJECTIVES OF THE STUDY

The objectives of the study were:

- to recommend **revised work norms and wage structures** to be applied for all types of Food Assisted Works (FAW) to ensure, among other things, a unified wage structure providing equal daily income to labourers irrespective of work activities;
- to suggest **simplified payment procedures**; and
- to highlight the **income and expenditure patterns**.

II. THE APPROACH AND THE REPORT

A three step approach was taken to the work.

First, a preliminary assessment was made based on review of available information, field visits and meetings with concerned officials. It is found in Part III of the Report. Terms of reference and question forms were prepared with local consultants charged with conducting the field research.

Second, the field survey was conducted, analyzed and reported upon under the supervision of the local consultants. Part II of the Report contains its findings. Part IV contains the forms used in the survey.

Third, the survey results were further analyzed by the international consultants and a comprehensive report addressing the objectives of the study prepared. It is found in Part I of the Report.

Focusing on the water, roads, fishery and forestry sectors of the RDP, IFFD and IFADEP, the approach has been:

- to estimate the actual labour productivity in FAW work activities in order to determine appropriate daily work norms; and
- identify an appropriate level and methodology for determining pay for a “fair days work.”

III. MAJOR FINDINGS

- There is a significant degree of complexity, obscurity and inconsistency in the way FAW schemes are currently estimated, measured and paid. As a result, workers are likely mispaid when actual measured productivity is equated with item wage rates and payments received. Although workers should receive a ‘square up’ at the end of the work once actual quantities have been measured, a small proportion in fact receive any final payment at all.
- Water, road and fishery sectors, which have casual earthmoving activities in common, can be distinguished from the forestry sector, where workers are

employed on behalf of scheme groups who effectively receive WFP support to establish a small enterprise.

- The typical FAW earthworker is a landless wage labourer who works on a FAW scheme for about one month, earning cash income from other sources including earthworks. FAWs is an important source of full-time, temporary employment for Bangladesh's rural workers. Forestry workers are engaged full time and have a pattern of income generation slightly more removed from the wage labour market.
- Cash is a significantly preferred form of wage payment by the workers.
- Supervision of works and quality assurance is inconsistent, partly due to inadequate training of the field supervisory staff. Projects where NGO or project technical assistance is involved stand out in terms of quality of work and supervision of wage payments.
- From 1997 the FAWs of WFP will pay in cash 30% of the wages due. GOB has undertaken this obligation. This is in the direction of a long-standing ILO/WFP agreement that at least 50% of the daily wage should be paid in cash.
- The results of the productivity survey indicate a higher than anticipated output for individual basic earthmoving of 0.50M³/hr or 4M³ day, with workers engaged in a variety of daily work hours and activities. The results also indicate that certain budgeted for items are not always carried out, i.e. clearing, benching coolie paths and setting out.
- There are few cases of good quality in difficult clod breaking and compaction activities. The best results were in the Feeder Road Type B of IFADEP and here mechanical compaction was being used. Interestingly, the work was in the same order of cost as for labour trying to do the same work.

IV. THE RATIONALE

- Following a review of the various documents and the results from the field, the mission found it useful to consider the wage system used in conventional or **classic model** labour based works. This requires the linking of **fair wages** with known and measurable **productivity** for the production of **quality infrastructure**, on time, and to acceptable technical standards.
- In the classic model **appropriate wages** are recognized as being critical for recruiting and motivating labourers. The mission therefore had to examine the "attractiveness" of the current level of wages, particularly in relation to wages in comparable CFW.
- Where the range of **productivity** norms for labour based activities in a particular region are not well documented or derived from similar work in agriculture, productivity trials are conducted to establish the productivity of labour. The study did this, drawing on the results of the field productivity survey work of HCL. Further analysis permitted the consolidation of certain basic estimating items and enabled the determination of equivalent values for these daily work norms between the sectors and the work items.
- The mission set out to examine the issues of scheme estimation, wage payment, work norms, productivity and quality of work as issues which were interrelated and

which therefore had to be considered at the same time if there was to be any likelihood of overall simplification and improvement from the current system and practices.

V. ADDRESSING THE WAGE ISSUE

- The study modeled the use of food as a wage, illustrating in **Diagramme 1** that variable food values are not a useful basis for comparison with cash paid wages. When mixed with a cash component, the food basis tends to undermine the self-targeting element of the food paid wage by increasing the value of the wage with a rising commodity price. It is recommended that a taka based wage be introduced.
- Addressing the appropriate wage level, the mission compared an estimated value of the current food wage with several possible cash comparables. The mission found that the survey respondents' acceptable minimum daily wage in agriculture had a good relation to the BBS Monthly Statistical Bulletin's **average daily rates of agriculture labour**, and recommended that it be used as the basis for a FAW wage, paid part in cash and part in wheat. Established practice for setting the exchange value of the wheat should be maintained, using *the 'X' value* for planning and implementation processes.
- The mission examined the possibility of adopting the established CFW estimating methodology used by line ministries as a basis for estimating schemes, but observed a wide range of rates and assumed productivity levels which were generally lower than those observed in the productivity survey, resulting overall in excessive costings. The mission had therefore to rule out this possibility.

VI. ADDRESSING THE ISSUE OF PRODUCTIVITY

- With a view to de-linking kilos of wheat from engineering quantities in the estimation process, the recommended estimating system replaces kilograms with **worker days**. On the basis of the productivity survey, the mission has endeavored to establish new and equivalent work outputs per day and to consolidate and eliminate some items.
- Using data from the productivity survey, the mission consolidated the currently separate items for different types of excavation into 2 basic soil types: 'ordinary soil' and 'hard and slushy' soil. The new basic **rate for earthworks** is derived from consistent results indicating 0.50 cubic metres of output per individual worker and assumes that this can be maintained over a typical day. The result is 4 M³ productivity. The data for hard and slushy soil conditions indicates productivity as low as 50% of the 'ordinary' soil conditions and this has been adjusted accordingly. The new basic earthworks rate will also include clearing and benching as part of its basic methodology without attracting any extra payment.
- The new rates apply under **new extended leads** so as to reflect the typical situation found in the field and to simplify and consolidate the rates. The reader should refer to **Table 6**. For exceptional cases, the mission recommends a retention of the traditional effective 10% factor between leads and lifts (1 extra lead of 10m equating with 1 extra 1m lift).
- For **leveling, clod breaking and compaction** the mission recommends a combined daily output of 4.5 M³. This reflects a calculated rate based on field

observations and also matches the work output of a leveling, shaping, clod breaking and compacting worker with that of an earthmover.

- The **turfing and grassing** rate has been determined on the basis of the survey data and on relating the quantity involved in a 'day' to that involved in normal earthworks.
- Finally the work to be carried out by the PIC/SIC/LCS is consolidated together and they are recognized for their efforts by receiving 1% of the labour cost for the scheme subject to certain conditions. Sardars will continue to receive 5% of the cost of the labour involved in their particular operations and the supervisors 1% for the proportion of the work for which they are responsible.

VII. POTENTIAL BENEFITS, IMPACTS AND IMPLICATIONS

- The recommendations simplify the wage rate. The workers are the intended beneficiaries, in the hope that they will be better able to know what is due to them for their work.
- The rate continues to be linked to productivity, but in the form of a traditional **task rate** rather than the current piece rate. To be fully effective, there needs to be improved supervision in the setting out and measuring of works. This should have the added effect of improving the quality of works. Relatedly, analysis of the productivity survey assures that the necessary work can get done to conclude schemes on time and budget, thus not calling for heavy handed supervision to achieve targets.
- The recommendations **de-link the wage** from the estimation rates, making it possible to set each separately. This makes future adjustment possible where, for example, experience shows targeted productivity to be too high or too low, or a wage is too high or low.
- The basis of the wage, the **agricultural rate**, is completely conventional, but also appropriate for Bangladesh, as shown in the analysis. It is accessible and sufficiently monitored by the BBS. The position of FAW work should remain where it seems to be now in relation with other employment opportunities -- generally not a troublesome competitor. The combination of the agricultural rate and partial payment in food may make FAW jobs less attractive, particularly as the price of food goes up in relation to the X Value wheat.
- **Careful monitoring** of the values in the framework provided by the study and the micro-level reaction to the modification will be necessary to determine that the intended results are achieved. **Sufficient time** should be given for adaptation as the recommendations are not radical in terms of labour based practice -- outside of the transition Bangladesh's FAW finds itself in.
- With regard to the new estimating norms, the key issue will be the achievement of better quality results provided that there is corresponding improved quality control. There should however also be improved monitoring of the workers to be certain that they are receiving their new consolidated rates and producing the quantity and quality of outputs intended. There is also the matter of improved training for the estimated 3000 to 4000 supervisors involved in these projects. An immediate plan of action is needed for this much neglected group. Under the new system it is expected that because of its greater transparency, that workers will actually

receive a higher proportion of their due and that the reputation of WFP in the FAWs will be further strengthened.

VIII. IMPLEMENTATION AND TIME FRAME

- WFP has incorporated the current work norms and wage rates into the Operational Contract of its current expansion. It may be possible therefore only to introduce the recommendations in full in the next expansion.
- The other FAW programmes -- as well as the WFP -- may be able operate the new system immediately in a pilot form. Programmes for the training of supervisors and sardars are fundamental, and should be developed and implemented at the same time as the piloting. During the piloting period, the more detailed studies of the forestry sector and women workers' productivity may be considered along with the necessary modification of implementation methodologies.

TABLE OF CONTENTS

I. BACKGROUND	1
A. Work norms, wage rates and the SIFAD mandate	1
B. The objectives and modalities of the current FAW programmes	2
1. World Food Programme's Rural Development Project	2
2. European Community Funded Integrated Food Assisted Development Project (IFADEP)	2
3. USAID/CARE Rural Road Network Component of the Integrated Food For Development (IFFD) Project	3
4. Government of Bangladesh FAW	3
II. THE SURVEY AND ITS' FINDINGS	3
A. Employment generated by FAW	4
1. Part of a "mosaic" of income generation for earthworkers	4
2. Two to three years of full time employment in forestry	6
B. Monetization and transformation	7
C. Receiving correct payment for work	9
1. Road, water and fishery sectors	9
2. Forestry sector	12
D. Gender specific remuneration	12
1. Earthworks	12
2. Forestry	14
E. Field Productivity survey	14
1. Bangladesh FAW technology in context	14
2. Earthwork productivity survey results	15
F. Forestry	18
III. THE "CLASSIC MODEL" OF LABOUR BASED WORKS, BANGLADESH'S FAW AND ITS SYSTEM OF REMUNERATION	19
A. The effects of wage payments in food	20
B. The appropriate wage level	21
C. Organization of scheme estimation	26
D. A "fair day's work" and communicating the wage to the PICs/ SICs and workers	28
E. The forestry sector	31
IV. IMPLEMENTATION	32
V. CONCLUSION: A SYSTEM IN TRANSITION	33

Annex 1: Terms of Reference

- Annex 2:** Documents
- Annex 3:** Meetings
- Annex 4:** Definitions
- Annex 5:** Tables for the forestry sector
- Annex 6:** Charts
- Annex 7:** Tables
- Annex 8:** Productivity targets and standards for food assisted water, road and fishery schemes
- Annex 9:** Recommendations on payments for supervision and supervisor training
- Annex 10:** Costing example under recommended work norms and wage rate
- Annex 11:** The WFP/ILO agreement on in kind wage payments and international labour standards
- Annex 12:** Submission of Director (FFW), Directorate of Relief and Rehabilitation
- Annex 13:** Logical framework for implementation

Table of Abbreviations

BBS	-	Bangladesh Bureau of Statistics
BWDB	-	Bangladesh Water Development Board
CBR	-	California Bearing Ratio
CFW	-	Cash for work
CTA	-	Chief Technical Adviser
DANIDA	-	Danish International Development Agency
DCP	-	Dynamic Cone Penetrometer
DOF	-	Department of Forestry
EU	-	European Union
FAW	-	Food assisted works
FFW	-	Food for work
FRB	-	Feeder road type B
GOB	-	Government of Bangladesh
GTZ	-	German Development Agency
HCL	-	House of Consultants
IFADEP	-	Integrated Food Assisted Development Project
IFFD	-	Integrated Food For Development Project
ILO	-	International Labour Organization
LCS	-	Labour contracting society
LGED	-	Local Government Engineering Department
MOFL	-	Ministry of Forestry and Livestock
MOR	-	Ministry of Relief
NGO	-	Non-governmental organization
OMC	-	Optimum moisture content
OPM	-	Open market price
PIC	-	Project Implementing Committee
RESP	-	Rural Employment Sector Programme (SIDA)
RDP	-	Rural Development Programme (WFP)
RD Project	-	Rural Development Project (DANIDA)
SIC	-	Scheme Implementing Committee
SIFAD	-	Strengthening Institutions for Food Assisted Development
SIDA	-	Swedish International Development Agency
SPWP	-	Special public works programme
TIDP	-	Tangail Infrastructure Development Project (GTZ)
USAID	-	United States Agency for International Development
VGD	-	Vulnerable Groups Development
WFP	-	World Food Programme

1 U.S. Dollar = 42 Bangladesh Taka

ACKNOWLEDGMENTS

The international consultants, Mr. Mike Shone and Mr. David Tajgman wish to express their gratitude to those who have made it possible to fulfill the objectives of this exercise. The team would like to thank in particular, Mr. Bishow B. Parajuli, Mr. Syed S. Arefeen, and Mrs. Khan of WFP. Special appreciation is expressed to Md. Rafiqul Islam, Deputy Chief of Economic Relations Division, Mr. Q.I. Siddique and Saroj Kumar Sarker of LGED, Mr. Najrul Islam of BWDB, Mr. Barman of MOFL, Dr. Shamsur Rahman, Chief Conservator of Forests, Mr. Md. Fazlor Rahaman Khan, Directorate of Relief and Rehabilitation,¹ Mr. Mahiuddin Ahmed and Mr. Shariff N. Anwar of House of Consultants, Ltd. for their cooperation and support throughout. A special thanks to Mr. Bas Athmer and Mr. Md. Rezaul Karim of IFADEP, and Mr. Peter Nesbitt and Mr. Kevin Fitzcharles of CARE for their support and assistance, both technical and logistical, throughout the mission in Dhaka. Gratitude is also expressed to Mr. Paul J. Bailey, Director and members of his staff at the ILO Dhaka Office for their support during the mission's stay in the city, and to Mr. Wim Schiefelbusch, Ms. Thelma Sanitrar and Ms. Beverley Coult of ALIMOND for their coordination of administrative matters, and to colleagues in the International Labour Standards Department and the Application of Standards Branch at the ILO for their inputs.

A final word of deep thanks must be expressed to the many field representatives of the line Ministries and agencies for their assistance in supporting the field survey and mission visits throughout the country. Without their support, this study would not have been possible.

¹ Mr. Khan was kind enough to provide a submission. It is reproduced in Annex 12.

I. Background

This study has been jointly commissioned by WFP/CARE/IFADEP-III. Its Terms of Reference can be found as Annex 1. Briefly, it is to recommend revised work norms and wage rates to be applied in all types of FAW activities in Bangladesh. These norms and rates are to ensure, among other things, an equal daily income for labourers irrespective of the work activities or sectors in which they are engaged and a harmonization between all food assisted programmes in the country.

The study has two foci: estimating actual labour productivity in work activities associated with FAW schemes in order to determine appropriate daily work norms and identifying an appropriate level of take home remuneration for FAW labourers. The approach taken includes document review (a document list is provided in Annex 2), interviews (a meetings list is provided in Annex 3) and a socio-economic and productivity survey. Additionally, definitions of terms used in this document are provided in Annex 4.

The study had three phases: design, implementation of field research and analysis, and reporting. It involved two international consultants, a local consulting firm (HCL), and the support of WFP, CARE, IFADEP and related GOB departments and NGOs.

The report of the study is presented in four parts. Part I presents an analysis of the issues based on the findings of the survey, makes conclusions and sets out recommendations for modification of the system. Part II is the report of HCL, focusing mainly on the survey methodology and its results. Part III is the Preliminary Assessment prepared by the international consultants at the end of the design phase of the study. And Part IV presents the question forms used in the study.

A. *Work norms, wage rates and the SIFAD mandate*

Food for work began in Bangladesh in 1974 following the famine of that period. Its history is well documented elsewhere and will not be summarized again here. Suffice to say that the programme was initially arranged as relief assistance, the aim of which was to feed the hungry in exchange for a modicum of work. The creation of productive and sustainable employment was not its primary objective at that time; in the absence of that objective, work norms were established on the basis of which workers were to be remunerated in food. Over time, however, WFP's focus -- as well as the focus of other FAW programmes -- has gradually evolved from relief to rehabilitation to development. A turning point, with implications for wage rates and structures, was the SIFAD Mandate.

In 1989, the SIFAD Task Force made a group of recommendations based essentially on the idea that food aid not be treated as a discrete, self-contained resource for development. Instead, the approach should be to focus on the underlying functions and development objectives of the FAW programmes and to build up national capacity to pursue these functions for as long as may be needed with or

without food aid. Food resources should be incorporated for both planning and implementation purposes within the overall envelope of available development resources of the country. This approach implies a reorientation away from the current situation of FAW being wholly organized around food being the sole means of remuneration. Fundamentally, this policy shift implies a system of wage norms and payment arrangements which result in *productive* employment and *quality* infrastructure development. It also implies a rationalization between work norms and wage rates in relation to CFW earthwork. The current FAW programme operates with the SIFAD Mandate in the background, and with these obligations for reform of the work norms and wage rate system.

B. The objectives and modalities of the current FAW programmes

Here we provide a brief description of the FAW programmes in the Bangladesh within the scope of the study.

1. World Food Programme's Rural Development Project

The WFP FAW programme comprises the VGD and RD Projects. The study's focus is on the RDP. The RDP provides food for development projects in four sectors: water, roads, fisheries, and forestry. Both construction and maintenance projects are supported through the RDP. Support for the roads and water sectors is directed through the government as implementing agency (LGED and BWDB), in cooperation with PICS. In the fishery and forestry sectors, support is directed through government or NGOs as implementing agencies, in cooperation with locally benefited groups. Guidelines have been established for project selection, costing, and implementation in each sector; these guidelines have been the model for other programmes.

2. European Community Funded Integrated Food Assisted Development Project (IFADEP)

This pilot project was formulated on the basis SIFAD recommendations for integrating food, cash and technical assistance in development activities. It consists of four sub-projects, two of which are part of the focus of the study.

- IFADEP II, Development of Small-scale inland Fisheries, is implemented by the DOF, based on GOB Planning and Implementation Guidelines. Its objective is sustainable improvement of the standard of living among groups of rural poor as a result of fish production operation. Project beneficiaries work under FAW to develop fish ponds.
- IFADEP III, Development of Growth Centre Connecting Roads (GCCR) is implemented by LGED, based on GOB Planning and Implementation Methodology. Its objective is improvement of market integration and

promotion of easier travel and transport in rural areas with growth and development potentials.

3. USAID/CARE Rural Road Network Component of the Integrated Food For Development (IFFD) Project

This programme supports earthwork rehabilitation and the development of improved structures on selected roads which are part of the road network. It is implemented jointly by LGED and CARE. The Component uses its own planning and implementation guidelines, separate from those of WFP. The Component does not see providing employment for labourers as its primary development objective; rather, the primary beneficiaries are the persons served by the roads which are brought into passable condition by project activities, enabling market access, etc. Finally, only payment for earthwork is made in food; other food resources are monetized centrally and payment for necessary labour and other programme inputs is made in cash.

4. Government of Bangladesh FAW

The GOB also directly supports FAW via bulk allocations of food to the constituencies of elected members of Parliament for use in local priority development works in various sectors. Schemes which are identified in the various sectors are provided technical support from line government Ministries and Departments.

II. The survey and its' findings

Two areas were surveyed as part of the study: the socio-economic situation of FAW focusing on wage issues, and productivity, focusing on what workers and work groups are actually producing during their work hours. One hundred and twenty schemes were selected for survey using a systematic random sampling technique, with 81 in the water sector, 19 in the road sector, 13 in the fishery sector, and 7 in the forestry sector (based on the proportion of wheat allocated to each sector). As described more fully in Part II of the report, the 120 schemes were identified proportionally to programme involvement in moderate, high, and very high poverty areas and three different soil types.

On the socio-economic side, three questionnaires were developed for earthwork schemes, i.e. roads, water and fishery sectors. Two other questionnaires were developed for the forestry sector. In the event, data was analyzed from 1069 individual worker surveys in 114 earth-work schemes. A group survey was administered to various work gangs. A functionaries' questionnaire was administered in each scheme surveyed. In the forestry sector, 51 care-takers were surveyed in 6 different schemes.

On the engineering side, two worker activity and worker productivity observations were made at each of 45 sites, including 18 each in the roads and water sector and 9 in the fishery sector.

A detailed presentation of the survey tabulations prepared by the local consulting firm, House of Consultants,² is found in Part II of the report. Here we emphasize only those results which are most relevant to our analysis. From the outset we point out that the orientation of FAW in the forestry sector is quite distinct from that in the roads, water and fishery sectors where earthwork is the predominate activity. For this reason the survey instruments for these two groups were somewhat different and the discussion below distinguishes where necessary.

A. Employment generated by FAW

Employment in FAW in the road, water and fishery sectors represent one piece of a mosaic of employment and income generating activities used by labourers in the schemes. The picture painted by this survey (as well as by the one conducted by IFFD of FAW labourers in 1991) is one of landless wage labourers working when they can for as long as they can in exchange for reward, be it a cash wage or a food wage. In the forestry sector, the RDP food allocation supports the development of an income generating resource for a community group. Despite this, for the caretaking workers involved, the work which entitles them to the food wage is more or less a full time job. The survey results show the differences between the two groups, with implications for work norms and wage rate systems.

1. Part of a “mosaic” of income generation for earthworkers

All of the respondents surveyed were functionally landless, using the established criteria of access to less than ½ acre of land. More than three quarters (78%) considered themselves wage labourers. Forty one percent of the labourers reported that their households had other sources of cash income at the same time as their employment in FAW; of those who did not, 87% had had a cash for work job in 1996, a slightly smaller proportion than that in the entire population (88.4%).

Almost all of the FAW earthwork labourers -- 95% of whom gave their primary occupation either as wage labourer (78.4%) or as farmer (16.7%) -- were engaged in these occupations, working in jobs during most of the year. Sometimes, some of them would engage also in supplemental income generating activity. Table 1. below shows the seasonal pattern.³

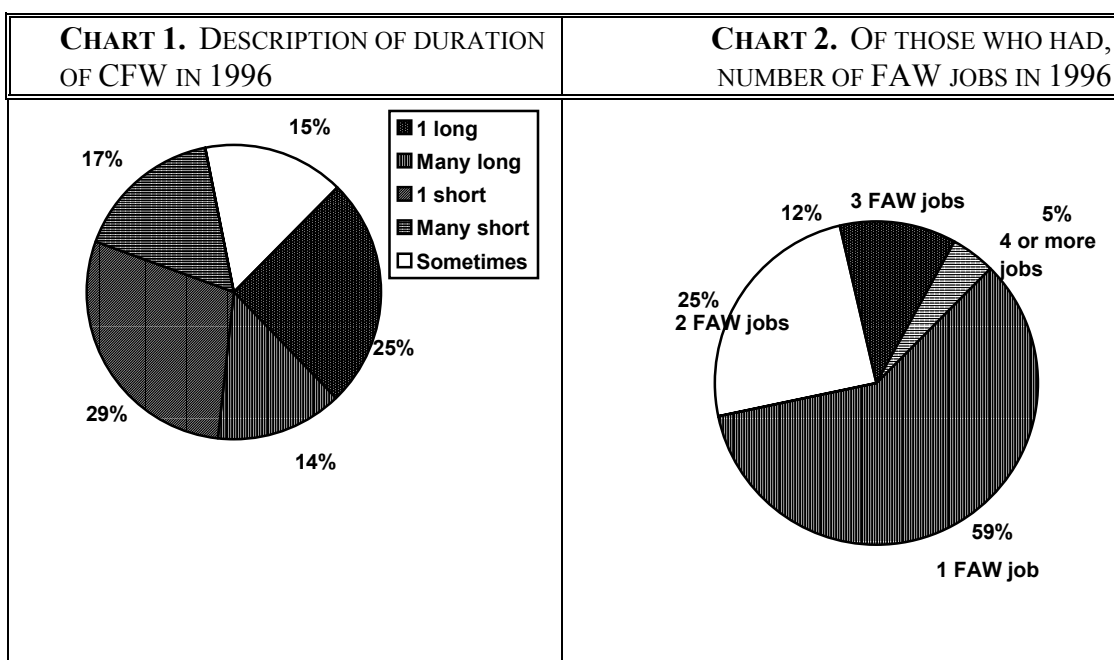
<p>TABLE 1. PRIMARY AND SECONDARY ACTIVITY DURING THE 1996 WORK SEASONS</p>
--

² Some of the statistics provided in Part II of the Report, prepared by HCL, may differ from those given in this part. This is the result of a further cleaning of data and detailed sorting in the process of analysis carried out here. For example, some statistics provided by HCL include the workers in the forestry sector although the question was relevant only to earthworkers.

³ The IFFD survey found strikingly similar patterns. See page 79 of its report.

Work Seasons	Primary Activity		Secondary Activity	
	Worked	Average daily earnings from this source (tk.)	Of those engaged in primary activity, also worked	Average daily earnings from this source (tk.)
Jan-April	98%	44.10	36%	12.83
May-June	93%	40.86	40%	14.26
July-Dec.	95%	42.73	42%	16.03

In 1996, 88% of the labourers had income from cash wage labour, having been occupied doing general labour (12%), agricultural labour (25%), small trading (15%), service (14%) and other occupations. Chart 1 below shows the described duration of the jobs, a short period being 1 month or less and a long period being 3 months or more.



Of FAW earthworkers, almost two thirds had been employed previously on FAW. The IFFD survey found similar results, with not a single labourer ($n = 3599$) having less than two seasons previous experience with FAW. In our study, almost 80% had been most recently employed on FAW during the January - April season 1996, 3% during the monsoon season, and 19% during the July - December season. Chart 2 above shows, for those who had any FAW jobs in 1996, the number they had. Almost 40% of FAW earthworkers reported also having done earthwork *for cash* in 1996. On average, they worked just under 40 days in their longest CFW earthwork job.

Asked about their last FAW job, 88% left the job because the scheme was completed. Interestingly, 5 % said they left voluntarily, suggesting the possibility that there were better jobs on offer and that FAW labourers were willing to take them.

Contrary to anecdotal suggestions of a substantial proportion of *migrant* FAW earthworkers, the survey found that 50% of respondents lived within 1.5 kms of the

work site, the next 25% lived between 1.5 and 2.5 kms of the site, and 95% lived within 6 kms of the site. Only 5% lived further than 7 kms from the site.⁴

It is important to observe the hours of work and days of work reported in the survey. The socio-economic survey showed that FAW earthwork labourers are essentially full time, temporary labour, working 8 or more hours a day, seven days a week (91%). See Annex 6, Chart 6-1. This was confirmed in the productivity survey. The work is, however, clearly temporary, for most of about 1 month's duration. See Annex 6, Charts 6-2 and 6-3.⁵ The work is, however, attractive enough for 86% to respond that they would accept full time work in the FAW job if it were offered to them on the same terms as received at present. Interestingly, preference for the FAW job full time did not appear to be related to access in the household to other income.

In light of the forgoing, it is difficult to conceive of FAW earthwork as being anything less than a source of regular, short term employment for Bangladesh's rural wage labourers worthy of a remuneration system which harmonizes with labourers' pattern of income generation and employment elsewhere.

2. Two to three years of full time employment in forestry

A different picture is painted of the employment opportunity presented labourers -- and the characteristics of labourers -- in the forestry sector. Here scheme labourers are employed on behalf of a 15 to 20 member scheme group, taking care of road side and block plantation of trees. Some 70% of schemes are implemented by NGOs. Under the forestry sector implementation methodology, arrangements are made for community groups to have access to land situated either in a block or at the road side on which trees are to be planted for the benefit of the group. The arrangement for the land is for a fifteen year duration. The community group is to select a caretaker for the plantation with the expectation of full time employment for two years in the case of mulberry trees and three years for other types of trees. An incentive payment of 4.67 kgs. per day is made to the caretaker from a RDP allocation. In time the trees begin generating income for the group through the sale of their wood and fruit. NGOs complement the RDP food allocation with training inputs. After the RDP assistance is withdrawn the plantation should be self-supporting, income and employment generating.

Only 35% of forestry caretakers have had previous experience in FAW -- half of that in other sectors -- and 78% of those with experience in forestry.⁶ One out of the

⁴ The IFFD survey similarly found 9.3% migrant labourers.

⁵ The IFFD survey found an average of 42 days.

⁶ It is interesting that 14 of the 18 respondents with previous FAW experience worked in forestry. Under the implementation methodology caretakers ought to be benefiting from the income generation of trees planted under the scheme. Problems with community groups and caretakers actually reaping longer term benefits from scheme plantation have been brought to the attention of the mission. We see it as relevant to whether or not the employment of the caretaker is sufficiently employment for self-benefit. See discussion in Annex 11. As indicated in the Annex, the issue really is not, as FAW in practice treat the forestry workers as wage labourers as concerns payment issues. There are references in the implementation methodology to "incentive payments" and these should be corrected.

nine mulberry tree caretakers had previous FAW experience and that was in the road sector. Eighty eight percent said they worked 7 days a week, the remainder six; similar long work hours were reported by mulberry tree tenders. The survey respondents were in all years of their FAW supported employment, i.e. first, second and third (in the case of non-mulberry plantations),⁷ and where necessary we analyzed aspects of employment in terms of this characteristic.

For example, caretakers in the *first year* of employment seemed to work fewer hours than in latter years. See Tables 5-3 I and II, Annex 5. This runs counter to an idea that there is less for caretakers to do daily in latter years of employment on the scheme. It might be possible that others are involved assisting the care taker during the particular heavy first year of employment, reducing individual hours. It is impossible to check this hypothesis with the current data as beneficiary groups were not thoroughly surveyed. Fewer forestry caretakers are engaged in secondary occupation than earthworkers. At most, only about 20% of all reported working in their secondary occupation, and there was no pattern related to year in service, particularly taking into account the small sample size. See Table 5 III, Annex 5. Of those non-mulberry carekeepers who were in their second or third year, 69% said they believed the work load is *reduced* in the second or third years. But these same persons said they worked on average 9.91 hours daily for 6.95 days a week -- more than the 7.8 hours daily for 6.90 days a week of those who said that the work did *not* decline.

Very curiously, when asked if caretakers would like to work more hours, 55% said yes and said that they wished to do so in order to earn more money. The daily earnings of the forestry sector are fixed at 3 and 4.67 kgs. daily and there is no substantial evidence to suggest any systematic *day to day* variation from this practice, although some deduction may occur from scheme to scheme. This is discussed further below.

Nineteen percent of the non-mulberry tree caretakers said they had worked for cash during 1996. Most said they worked as general labourers or in weaving and craft; the smallest percentage engaged in earthworks. Of the mulberry tree caretakers, 50% said they were engaged as cash wage labourer in 1996, all as either general labourers or craftworkers. Of both groups, the largest percentage -- between 40 and 60 percent -- described their frequency in cash wage labourers as occasional. These figures are not surprising as cash income could be sourced from other family members; more than 50% of the forestry workers surveyed were women.

Although the sample size is small, the impression given by the available data is that the forestry caretakers are less involved in a range of income generating activities than the earthworkers. The magnitude of the difference is difficult to determine. However, the institutional arrangement is clearly quite different, and it would be expected to alter the patterns of employment generated.

B. Monetization and transformation

⁷ See Table 5-2, Annex 5.

The socio-economic survey found a significant preference among labourers for cash as remuneration. It also revealed workers' practices in transforming food given as remuneration into cash. These results were also found in the IFFD survey.

All forestry caretakers reported being paid always in wheat. Among earthworkers three labourer groups are apparent:

- the first group received 100% of their remuneration in food and reported that they sold none of it;⁸
- the second group of labourers received 100% of their remuneration in cash;⁹
- and the third group reported that they received their remuneration in food but transformed a portion of it to cash.

The proportions of these groups are significant. The food retention group represented 41% of labourers, the food monetized group represented 17%, and food transformers represented 42%. Furthermore, of the food transformers, slightly more than 50% transformed 50% or more of their earnings at prices averaging 1.33 taka less than their perception of the market wheat price; 50% of the transformers said that they received the same price as that on the open market. The food retention, food monetized and food transforming groups were not significantly clumped sectorally, regionally, or by poverty-indices.

Continuing with the earthworkers, about 62% of all labourers said they preferred cash remuneration over food. Of those who said they were paid in wheat, 53% preferred all cash payment and 30% wanted all wheat; there was no difference between the sexes in the group. Similar proportions were reflected among heads of households. Of those who said they were paid in cash, 100% of the women preferred to be paid all cash, and 82% of the men wanted all cash. Of household heads, 82% wanted all cash, 12% wanted all wheat. If any conclusion is to be drawn it is that all cash is significantly preferred, slightly less so if workers are already being remunerated in all wheat and substantially more so if the worker is being paid in all cash.

Looking for reasons for this preference, we can observe that 14% of those regularly receiving wheat as their wage said they had on occasion received payment in bad wheat. The price of wheat was relatively high during the survey period, suggesting that the preference for cash may not be wholly based on economics -- at least not short term economics. The amount of wheat given, with reference to the number of stated beneficiaries in each case was not inordinate, considering WFP nutritional standards for Bangladesh.¹⁰ Related to this, of course, is the need for cash

⁸ Anecdotal evidence suggests that a proportion of these persons responded in this way because they feared that the policy of food as remuneration was a strict one which prohibits private transformation. This is not the case.

⁹ In each case, the functionaries survey confirmed that the practice in these schemes was for the PIC/SIC to decide on monetisation.

¹⁰ Using the average daily earnings in food found in the survey, ~6.75 kilos, the typical worker takes home 47.25 kgs. weekly, equivalent to 70,875 kcals. Assuming the WFP norm of 86% of daily requirement coming from cereals and a daily requirement of 2150 kcal, the earnings are sufficient for approximately 5.5 persons per weeks. This figure is astonishingly close to the average number of beneficiaries reported in the survey (5.83), as well as the average beneficiaries of those who transform

to purchase other necessities and the general availability of wheat for purchase; 85% overall said they would have no difficulty buying food on the open market if they were paid in cash.

Among the forestry caretakers, a similar proportion (70%) reported selling a portion of the food wage. On average, 38% of what was earned was sold. The distribution however, shows that less than a quarter of those who did transform sold half or more of the what they earned. And 50% of those who sold part of the food wage sold *less* than a quarter of what they earned. These figures are surprisingly different from the earthworkers. Fifty eight percent of the sellers said that the last time they did so the price they received was the same as then on the market; about 30% said they got 1 taka less per kilo. Considering the possible reasons for selling, 84% said they would have no difficulty buying food locally and 31% said they had on occasion received bad wheat in payment. In conclusion, 55% said they preferred payment in cash, 33% in wheat, 4% in paddy and 8% in a blend.

C. Receiving correct payment for work

1. Road, water and fishery sectors

The focus of this aspect of the survey was placed on finding evidence of physical measurement of work and worker knowledge and understanding of the rates applicable to items of production.¹¹ This approach was taken with the object of determining how the system of work norms and wage payments might be improved to ensure that labourers are more likely to receive what they are due.

In 1985, a mission evaluating the Four-District SPWP project in Bangladesh commented on workers receiving their proper remuneration. The paragraph in the report on the matter so aptly reflects the opinions of the current writers that it bears quotation.

“The payment system is based on the quantity of work performed per gang and is expressed as rate per 1000 cft. However, in practice, the payment system is more complex and confused because it consists of advances, daily installments, adjustments once or twice a week according to the measurement of actual work done and occasionally, readjustments after completion of schemes. Moreover, there is no site recording and monitoring of actual wages paid to SPWP workers by project committees or contractors. Therefore, the findings given below are based on

their food earnings (5.36). A nutritional approach to wage setting has not been strongly advocated amongst local interlocutors, nor is it consistent with a practice of payment only on productivity -- which could yield less than nutritionally sufficient daily quantities. It is not the approach taken here. Ref. “Summary record of foodgrain requirement round table discussion held on 14 August 1996”, WFP - Bangladesh, 29 August 1996.

¹¹ This awkward term “items of production” is used because in practice the productivity is presented as small quantities of work items such as one cubic meter of earth, an additional lead, an additional lift, so many m³ of compaction, etc. Comprehension of these items in relation to the much larger magnitudes of the practiced group work output is one of the grounds for concern giving rise to this study. The erratic patterns of reported payment and recorded productivity is well illustrated in Table B1 of HCL’s report of the productivity survey.

memory recall of interviewed labourers. They give some indications of actual wages received by labourers as compared to scheduled wage rates published by the Zila Parishad Office (more specifically by the LGEB executive engineer's office in that district). It is also noted that these official scheduled rates differ from district to district."¹²

The fact that the SPWP was paying cash for work is of no consequence since the current study focuses on the same underlying systems. In fact, the chances for confusion are increased by payment in food; this is brought out by results in the socio-economic and productivity surveys.

Large proportions (93%) of earthworkers rely on their sardars for information about the wage rate and work norm. Combined with substantial illiteracy (~75%) and innumeracy (~64%) hampering comprehension of mandatory signboards, the fact that by and large labourers are recruited by their sardar (78%) and not visa versa, and that labourers receive their wages directly from the sardar (45%) or a PIC official (33%), suggests that sardars may be in a position to determine or at least be aware of what the wages labourers actually receive for their work -- even without reference to productivity.

Whether underpayment actually occurs is, however, quite difficult to confirm. It does not help that more than half of groups (52%) indicated that nothing is signed to show payment and more than a third of the groups (39%) said that there were no record books kept. Nor is it particularly helpful to know that the food allocated to a scheme has been disbursed and the appropriate officials have signed off on the distribution of same as wages. In light of this, other evidence must be relied upon to conclude the likelihood of correct payment and, by implication, the need for remedial measures.

It is recalled that in principle labourers are to be paid on a productivity basis. Under such basis, the aggregation of daily earnings data should produce a normal distribution curve, particularly so where the hours of work are reported to be so much the same, as in this case. In fact, as seen in Annex 6, Charts 6-4 to 6-9, the data for sectoral and form-of-payment groupings *suggests* -- in relation to the normal curve -- underpayment for those paid in cash and a central tendency for those paid in food. Neither pattern is consistent with productivity based remuneration. This evidence is not conclusive, however, as it is said that labourers are paid ending balances on advances. Of those surveyed who considered that they were paid on the basis of measurement (productivity basis) and that they had received an advance of wages ($n = 796$), only 8% could say that they had received a payment which they understood to be the balance; 74% said they had not yet received a payment of the balance. And 18% believed they received their entire payment in advance. Of those surveyed who had *prior* FAW experience (almost 70%), only 28% said they had received a final payment in their last job on the basis of a measurement of work.

We investigated the idea that greater supervision of day to day activities may increase the possibility that labourers are paid on a productivity basis. Selecting only those schemes where IFADEP or CARE provide technical support in addition to

¹² Evaluation of three special public works programmes: Bangladesh, Burkina Faso and Uganda (Geneva, February 1985), p. 37.

LGED -- including closer supervision of square ups, measure ups and payment processes -- the distribution of payments in certain respects appear more normal. The sample sizes were too small to reach firm conclusions, taking into account the further division between those paid in case and those paid in food. See Annex 6, Charts 6-10.

Completely convincing evidence does not exist of daily setting out or regular periodic measurements which would be required to regularly compute the amount of productivity payments. Focusing on the matter in the socio-economic survey, 70% of the labourers said that their daily work was fixed for them, 4% said that the group's daily work was known to them individually, and the remaining 26% said that neither their daily work was fixed for them nor that the group's work was known to them.¹³ In the group survey, 30% said that there was no daily setting out of work. The sardars in less than half of the 45 schemes surveyed by the productivity observation teams had been briefed about the design of the project; in only 3 of the schemes were they aware of essential setting out references. During the field visits stakes could be seen planted in the ground at some sites, but they were situated in such a way as to suggest their marking of road or embankment alignment. Additionally, only 37% of the schemes observed by the productivity teams had their borrow pits measured and set out.

Finally, it was possible to calculate daily earnings based upon actual productivity observations made as part of the survey. A summary of the data is found in the Table 2. below; more details are found in Annex 7, Table 1.

¹³ We suspect that this question was unclear insofar as in translation the focus may have been placed on the work being *fixed by another*, rather than the *quantity of work* being established.

Division	Calculated daily wheat earnings based on observed productivity (kgs)	Daily wheat earnings reported in survey (kgs.)	Daily Difference
Rajshahi	8.56	6.91	-1.65 (19%)
Khulna	9.02	6.79	-2.23 (25%)
Barisal	8.52	7.35	-1.17 (14%)
Dhaka	8.15	6.72	-1.43 (17%)
Sylhet	6.19	6.61	+0.42 (7%)
Chittagong	5.40	6.56	+1.16 (21%)

In light of these findings, a confident conclusion can be reached that it is unlikely that labourers are systematically paid on a productivity basis or paid amounts which fully represent what they have worked for. It is impossible to be more precise given the data available. Nevertheless, we would judge that the situation justifies an attempt at improvement.

2. Forestry sector

There is no issue concerning daily variable, productivity based, wage payments in the forestry sector. It is a flat rate of 3 kgs for mulberry plantation and 4.65 kgs for others. Somewhat surprisingly, some of the respondents gave results suggesting underpayment. See Table 5-1, Annex 5 for details. The mission had heard that implementing agencies make deductions from food wages to cover transport charges. The reported variations were, however, also present in the GOB implemented schemes. Without further data, there is no clear explanation for this.

D. Gender specific remuneration

In all, 92 women were surveyed: 20 working in the six forestry sector schemes, and seventy two working in 23 different roads and water sector schemes.

1. Earthworks

Looking at the earthworkers, almost all women (82%) worked in single sex groups, the remainder in mixed groups. A disproportionately high number (92%) reported being paid regularly in food; 6% said they were paid regularly in cash. All but four of the female respondents worked in the water sector.

The sample, particularly of those paid in cash, was too small to reach convincing conclusions. Table 3 below shows data on cash and food paid daily and hourly earnings for men and women in the road and water sectors. On average women in all

sectors tended to work between 30 and 45 minutes less than men daily. Women's hourly earnings in the water sector therefore are *higher* than men's.

TABLE 3.	ROAD SECTOR (n=4)				WATER SECTOR (n=66)			
	Cash paid (tk.)		Food paid (kg)		Cash paid (tk.)		Food paid (kg)	
Sex	<u>Daily</u>	<u>Hrly</u>	<u>Daily</u>	<u>Hrly</u>	<u>Daily</u>	<u>Hrly</u>	<u>Daily</u>	<u>Hrly</u>
Male	44.97	5.51	6.88	.849	52.70	5.89	6.88	.815
Female	n/a	n/a	5.18	.714	50.00	6.29	6.76	.851

It had been assumed that women in earthworks took home lower earnings either because,

- (1) their actual productivity was lower; or
- (2) they were engaged -- indeed, segregated -- in lower valued activities.

Based on the survey, neither exactly seems to be the case.

Unfortunately, the productivity survey did not observe any separate women's groups. It is impossible therefore to judge whether either actual productivity of a women's only group or the resulting earnings -- which ought to be based on the values attached to the appropriate work items -- are lower than for men.

As concerns work activities, it is clear that women, like men, are engaged in FAW earthwork as temporary full time employment. See Annex 6, Chart 6-11. Thus, assuming equally valued work activities, hourly earnings should be equal between the sexes. The data is clear that women were engaged disproportionately in work activities which were *least* preferred amongst the labourers, and that there was no particular preference among them for that work. Neither, however, does there appear to be a particular preference to do the *generally preferred* earthwork, whether it is in fact higher paying or not. The strongest preference among the women is for mixed activities. See Annex 7, Tables 3 and 4. Women are, however, directed to five particular work activities under the water sector Planning and Implementation Methodology which explain their higher participation therein.

Importantly, it does not appear as if relegation to the least preferred work activities hampers daily earnings in the water sector. But then again, it is the compacting, clod breaking, leveling activities of the road sector which have been suspect of undervaluation. As noted above, a problem with the sample size (only 4 women, all paid in food, in the road sector) prevents any conclusions. In fact, the available data suggests that any lower values attached to work activities in which women are disproportionately involved are *not* having an impact on hourly earnings, at least from data derived from the water sector. This *may* be the case because according to some portions of the Planning and Implementation Methodology a 20% premium is paid to work done by exclusively women's groups.¹⁴ But this data may merely reflect the

¹⁴ Close examination of the data shows that the surveyed women were almost all engaged in the same work gangs performing the same work activity, in mixed sex schemes. Close examination of documentation suggests confusion, acknowledged in interviews with officials concerning the

practice of payment in reality of a time based daily wage. It may really be that women are actually producing more than men -- in a different work activity -- but being paid the same. The matter remains unresolved in both the water and to the road sector.

2. Forestry

The situation in the forestry sector is very different on the gender issue. There is no question about possible undervaluation of work activities, as there is only one job. Furthermore, there is no issue about knowledge of the earnings due at the end of each day; there is no distinction made between men and women. Any issue involves the broader orientation of support in the sector: is it to be specifically aimed toward women, or to a wider population of poor? The question is beyond the scope of this study.¹⁵

E. Field Productivity survey

1. Bangladesh FAW technology in context

As has been observed in the field and during the survey, the Bangladesh FAW activities usually involve essentially what is described internationally as *labour intensive* technology, that is, involving labour and hand tools only. This contrasts with the now more widely used labour based technology, which is the technology supported by the ILO's technical cooperation programmes. Labour based programmes involve an appropriate mix of labour and equipment as necessary to achieve the minimum technical standards for the type of infrastructure under construction, as is seen on the IFADEP 3 project.

Experience elsewhere has demonstrated the technical quality shortcomings of labour intensive methods, and from the results of the survey these technical shortcomings are certainly also being experienced here in Bangladesh in the FAW programme, particularly when it comes to compaction of earthworks.

This issue is mentioned here as it must be recommended that the current work norms, as revised, are appropriate for certain types of work only, whereas in the case

methodology, on the point of a premium *to be paid*. Thus, the premium appears to be listed only in section "9. Estimates of wheat requirement" of the water sector Planning and Implementation Methodology, related to particular work items, i.e. Field Channels, Embankments, Allied items II, Ring Bundh, Canals, and Cross bundhs. In section "22. Wage Rates" there is no mention of the premium as such, only to the idea that preference should be given to women in performing 5 particular work items, 3 of which are *not* subject to the premium in estimation and one of which, jungle clearing, is not included in the estimation schedule. There is no reference to the premium rates set out in the Operational Contract of Expansion 10.

¹⁵ But certainly the success of the RMP comes to mind in comparison. The difference is that the support in forestry activities is in an occupation which is itself income generating -- provided access to land, replantation stock and other inputs is available. In RMP, the four years of employment are capped with support and training to development of small enterprises not necessarily related to road maintenance.

of compaction for say feeder roads, mechanical methods of compaction should be being utilized if technical standards are to be achieved, especially those already identified for pavement surfacing. Interestingly, IFADEP had recently costed both labour intensive and mechanical compaction costs as being comparable as between T10.5 and 12.0/M³.

2. Earthwork productivity survey results

Having in mind the aim of possibly consolidating and simplifying the existing estimating guidelines, the results of the survey have been considered in 4 main groupings:

- i. basic earthworks (excavation, hauling and dumping);
- ii. shaping, clod breaking and compaction;
- iii. turfing and grassing; and
- iv. supervision, setting out, dewatering and management (including quality control).

a) Basic Earthworks

The productivity survey on 45 schemes across the roads, water and fisheries sectors have recorded higher than anticipated basic earthworks productivity results.

The most recent previous assessment of productivity was that carried out in October and November 1993, by the ILO in a Management review - cum - appraisal of the WFP assisted projects Bangladesh 2197/viii & ix., National Food- Assisted Works Programme for Land and Water Development.¹⁶ This study indicated basic earthworks productivity in the range of 2.20M³/day to 3.30M³/day.

The results of the productivity survey show an average hourly output or productivity per worker of approximately 0.50M³/hr or 4m³ for an 8 hour day for basic earthworks excavation and carrying (throwing) of ordinary “soft” soil conditions for all soil types from sand to clay silts and under a varying lead and lift situation in the range of <50m lead and <3m lift.

Considering the reasonable consistency of the results, it is assumed that the data collected is that for a typical day although it is possible that observation prompted labourers to produce more than usual on the day of the survey.

Labourers however are working a variety of hours per day both within and between different work sites and sectors. It is interesting therefore to compare the work group output with the individual worker output. Details of the review of the earthmoving productivity results and recommended standards are included in Annex 8.

¹⁶ See draft engineering component report by B. Athmer ILO consultant Ch 4. And Annex 1 tables.

In determining the typical productivity across the roads, water and fishery sectors the most predominant soil condition (“soft”) was established as the basic or benchmark category. It was then possible to relate productivity under hard and slushy soil conditions to those of the basic soil condition and indeed to relate other variable and influencing factors as well.

b) Shaping, Clod breaking and Compaction

Field observations indicate that although general “cosmetic” shaping of the site is carried out, the placing of the fill in specified layers, proper clod breaking and compaction is not usually carried out correctly and in some cases not at all. This observation is further confirmed by the Dynamic Cone Penetrometer (DCP) tests summarized in Table C1 of the productivity report.

These results do not come as a great surprise as LGED and WFP internal monitoring system is also regularly report unsatisfactory attention to clod breaking and compaction. The worker productivity in clod breaking and compaction was high (between 1 and 3M³/hr) but bore little relationship to the compaction results as wetting and drying of the soil is not practiced and compacting work is often futile unless carried out at OMC. Likewise, the selection of the most suitable soil types is not always possible, so we have conundrum -- can better compaction be achieved if more attention is paid to it? Yes. But is it possible to achieve good quality results from unsuitable soils and soils too wet or too dry? No.

Shaping, clod breaking and compaction is generally carried out as one combined activity by a separate group of workers from those involved in basic earthworks. Although shaping work was being carried out in the majority of projects, clod breaking and compaction was observed as taking place on only 14 of 37 road sector sites and 6 of 34 in the water sector, although it is specified and estimated for.

It has also been observed that there were generally insufficient workers involved in clod breaking and compaction in relation to the number of workers involved in earthmoving. The result was soil left without compaction starting to dry; if it ever was to be compacted it would then be more likely to be below optimum moisture content (OMC). The CBR values obtained from the very rapid and effective use of the DCP, on 16 sites were a mixed result with 10 results over the specified CBR of 4 and the best results from mechanical compaction sites. As a general guide there needs to be at least one clod breaking/compaction worker for every one general earthworks worker unless the soil is particularly easy to work. In recommending a balancing of workers between excavation and compaction on a 1 to 1 basis, the mission sees the opportunity for increasing work activity rotation and improved results with work gangs involved in all aspects of the earthworks cycle. In sum, the focus needs to be more on the finished project with a more holistic outlook.

Although the sample is very small, it has been possible to establish an approximate target productivity for the clod breaking and compaction using hand tools and this is detailed in Annex 8. Clearly the current payment for clod breaking and compaction is

undervalued. The exception is the CARE project. But even there mixed results are reported perhaps due to inconsistent technical follow-up and monitoring. Interestingly, WFP undertook a pilot project in Khulna in 1992/93 incorporating increased payments and quality and compaction results were reportedly much improved.¹⁷

The mission is recommending a continued effort with clod breaking and compaction as the use of mechanical methods on rural roads and in water projects in remote areas will not be immediately achievable, except for the introduction of locally made hand towed concrete drum rollers and use of low cost power tillers to tow concrete rollers and compact the fill in layers. The continued effort with this activity is justified as it is essential for protecting the earthworks against severe erosion and damage to the environment in the monsoon conditions. However, all FAW projects should be planning a move to mechanical compaction methods in the next 12 months, initially using hand towed or power tiller towed locally made concrete rollers and as budgeting permits double drum vibrating rollers of at least 1.5 ton capacity.

In order to achieve improved results it will be necessary to increase payment for this activity for water and rural road projects. This recommended increase in rate will bring the basic rate into line with that for “ordinary” soil excavation but it must however be accompanied by a corresponding increase in quality control and possibly penalties for non-compliance with the specified minimum compaction standards. The current payment penalties used in RDP 16 of LGED are recommended as is purchase and use of DCPs for all groups of schemes.

For FRB, however, where there are to be much higher traffic loadings and as these roads are to be paved within a short period of time, then the mission strongly recommends mechanical compaction methods only be applied, initially on a prioritized basis with roads selected on the basis of the full paving programme and traffic design data.

c) Turfing and grassing

During the survey period no turfing or grassing activities were being carried out, however it was possible to estimate productivity for turfing or grassing from interviews with the workers and the sardars based on their previous season’s experience.

The mission has also been able to consult with other projects to be able to recommend target productivity for these activities which are usually undertaken after the monsoon season. Details of the recommended productivity levels are included in Annex 8. The mission is also recommending that in future the WFP separates out this activity as a separate contract and that they encourage this to be an “all women” activity considering the currently very low level of women currently participating in the overall programme.

¹⁷ Report on FFW Pilot Project, EFP, Dhaka 1993.

d) Supervision, setting out, dewatering and management (including quality control and maintenance)

Fundamental to the process of obtaining good results is quality control and good management. It has been observed during the survey from the reported visits to the site by engineering personnel (see Tables D6 and E6 of the HCL Survey) that with the exception of the CARE and IFADEP projects that overall supervision and management is weak and accounts for the general poor quality of the works. Currently setting out and dewatering activities can be much improved. At the present time the PICs/SICs do not receive any official reward for their efforts, except on the pilot projects of IFADEP 3 which work through LCSs. The mission is recommending two important changes to the present system which, if carefully monitored and accounted for should result in more efficient operations and more sustainable works.

- In future all supervisors are to be carefully selected and trained to be able to better manage, set out and measure up site works. New selection criteria should apply in order to attract literate and numerate candidates and it is recommended that the supervisors not be designated by the scheme but engaged as temporary staff by the implementing agency. This is to help ensure their independence and facilitate a good working relationship with the GOB engineers. The supervisor should be trained in basic measurement and in the use of the DCP so that day to day results on compaction are known by workers.
- The PIC/SIC/LCS is to receive payment for achieving good results as assessed by the GOB engineer regarding compaction, setting out, dewatering and general standard of finish of the completed works and based on 1% of the cost of labour. This is in addition to the 5% currently paid for the working sardars' work and the 1% for the supervisors work.

Details of this recommendation are set out in Annex 9.

F. Forestry

The WFP support to the forestry sector should be viewed more as support to small enterprise development than a means of employing wage labour. In this way, assistance to this sector differs from that to the others. Productivity measurement should focus therefore on the health of the enterprise, the viability of its business plan, and the longevity of its continuation after withdrawal of WFP assistance. Tree survival rates and hours occupied with plantation and maintenance are important in the short term, but longer term objectives should not be obscured by them.

The field productivity survey did not attempt work measurements in the forestry sector. It was felt that observations in this sector over the short term of the study, would not be particularly accurate, considering the range of activities, cyclical nature of work, and slower pace at which work is accomplished. It was also noted that the survey period did not encompass the period of more intense work, during the April to June planting season. It may be useful for WFP at some stage to attempt measurement

of labour inputs in the forestry sector, in an appropriate fashion over a period of longer duration.

Looking at survival rates -- another important measure of productivity in term of the income generation capacity of the activity -- WFP currently measures the success of the projects in terms of 60% survival. The rate of tree survival seem low by local comparison. The 1994 GOB evaluation on the Rangpur region rural development programme (RDP 8&9)¹⁸ reports for example, an overall survival rate of 96% and notes that they are targeting 100% survival. This was a cash payment project.

On the Ganna Road project near Jessore, supported by the NGO Jagorani Chakra, 15,000 trees were planted from July 1993 and 9000 survived, with replantings in year 1 and year 2 totaling 8000. The reported survival rates were in fact only 60%, although it was not clear whether this was a result of the targets set (with corresponding replanting) or whether it was the best that could be achieved under the circumstances.

The LGED Infrastructure Development Project supported by Danida, reports that they had 72% survival rate during 1993-94 when 136,000 saplings were planted involving 700 women workers. In 1995-96 the same project 124,000 saplings were planted with a survival rate of 83%.

It might be appropriate for the WFP review the 60% survival rate as a means of assessing scheme viability and that such measurement be based on a technical specification for the size, shape and condition of the particular tree species involve in such an assessment. Consideration may be given to cancellation of schemes not being based of the non achievement of the survival target, which is at present are overly dependent on the performance of the intermediary NGO in efficiently managing the sapling replacement needs but rather the NGOs themselves are placed at risk because of the poor results.

III. The "classic model" of labour based works, Bangladesh's FAW and its system of remuneration

Work norms, wage rates and wage payment procedures are key to productive employment and quality infrastructure creation using labour based technologies. Under the "classic" model of labour based activities, workers are paid on the basis of productivity. It is this linking of payment to output which enables one worker to earn more than another during a period of working time. Operation of the workers' interest also enables the inherently human production process of labour based works to operate in line with the costing of a project. The system reduces the need for overly close or heavy handed supervision, with quality being assured by payment being made *only* upon production to known quality standards. We highlight that under the classic model, the wage *rate* is guaranteed, not the take home *earnings* of the

¹⁸ Post planting evaluation of the tree planting plantation programme of 1992-93 sponsored by RRRDP as an integration work between RD-8 and RD-9, prepared by Imrul Kayes Muniruzzaman.

worker. A hard working labourer (or gang) will produce more, thus earn more, in an eight working hour day than the less hard working labourer.

We observe that Bangladesh -- with the exception of the forestry sector -- seems to be atypical of other FFW schemes in that the daily food ration (wage) is not predetermined. Here, in principle, the amount of daily earnings in the earthworks is determined by output. This practice is consistent with the classic model of labour based works but may run contrary to nutritional objectives of FAW and, in the implementation modes currently used in Bangladesh -- particularly considering the practice of group work -- may be a source of wage mis-payment. Keeping this and the implications of the SIFAD mandate in mind, in this section we elaborate some fundamental aspects of our recommendations and the reasoning behind them. Our focus is on earthwork; we shall return to the forestry sector.

A. The effects of wage payments in food

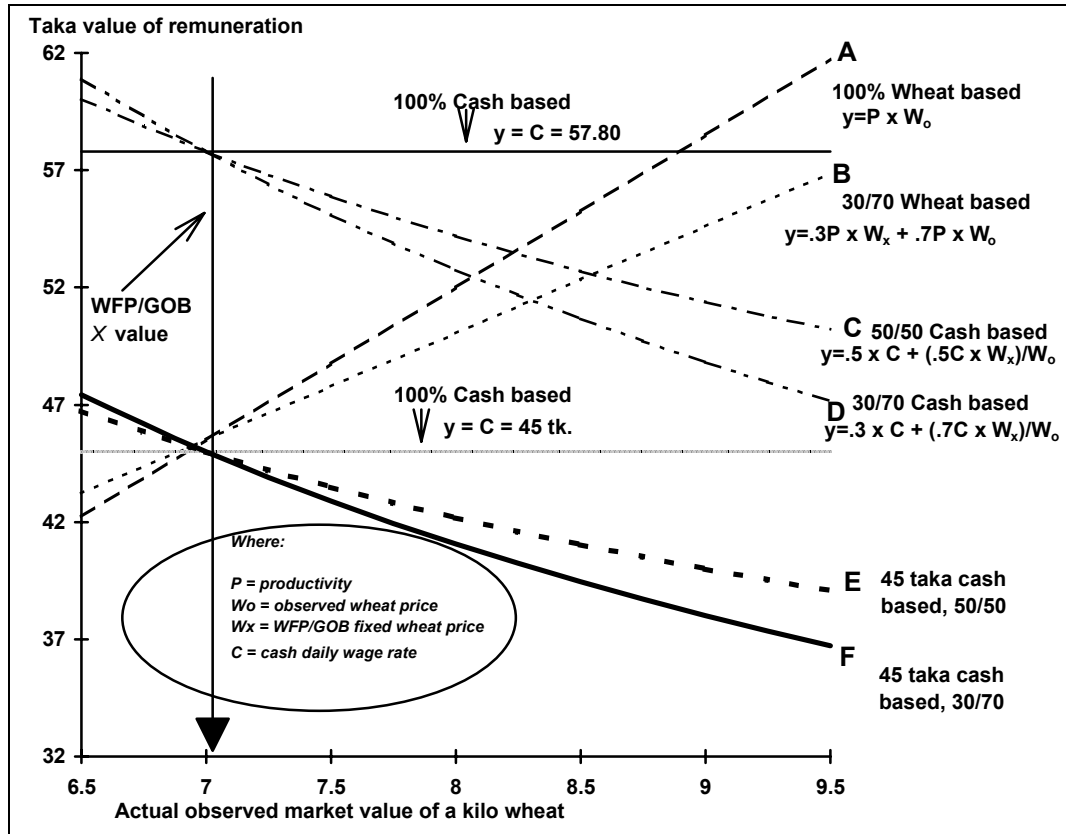
An inherent problem in using food as the form of wage payment is that it has a *variable value* in relation to other wage employment. Where the commodity has a high price on the market, the value of the wage will be high, theoretically making the food paying job more attractive, provided the quantity of the commodity remains the same. This may have a positive affect on productivity, but also an undesired affect on targeting objectives. The judgment of a wage paid in food being *too* high or *too* low in terms of targeting objectives can only be made in relation to the going cash wage for labour and the actual values involved.

Diagramme 1 below shows an estimation of the value (y-axis) of the current average daily FAW food wage earnings in Bangladesh. Each of the lines A, B, C and D assume the same productivity during a day of work, under different wage payment systems in relation to the changing value of a kilo of wheat (x-axis).¹⁹ Line A shows how the value of 100% food remuneration increases with a rise in the market value of the food commodity. The affect is lessened as the proportion of food is reduced and replaced with cash (line B). Accordingly, it is a good thing for targeting objectives that WFP and GOB have agreed to FAW wage payments at 30% cash and 70% food, and the practice should be extended throughout FAW in Bangladesh.²⁰

¹⁹ The assumed productivity is that achieved to earn 6.5 kgs of wheat daily under the current payment system. In the survey, the average daily earnings for earthworkers was found to be approximately 6.75 kgs. For this analysis, it is not necessary that the assumed productivity was *actually* achieved. In this analysis, the observed daily earnings (6.5 kgs.) are taken as a proxy for observed productivity (P), as they are in principle directly related to productivity. Lines A, B, C, and D are plotted from the formulas indicated, using the *X* value (discussed below) of 7 taka. The horizontal line at approximately 58 taka representing “cash based” valuation of *daily* remuneration, is based on the rate of 28.19 taka per m³ in the Circle Analysis report for Dhaka O&M Circle, assuming the same daily productivity (calculated to be 2.05 m³) which would earn a worker 6.5 kilos of wheat under a typical food valued scheme (“typical” in the sense of including various allied items, see footnote 5 in the Part III of this report, Preliminary Assessment).

²⁰ The practical considerations discussed here are, in fact, the underpinnings of the international labour standards relating to in kind payment of wages. These standards are evoked as a juridical justification for the blending of cash and wheat in payment of the wage. See full discussion in Annex 11.

DIAGRAMME 1



Beyond this, it seems to be a desired thing amongst FAW labourers throughout schemes within the scope of this study. Despite the recent high values of wheat in the country, labourers' preference for cash over food is pronounced, and their transformation practices relatively clear. In the light of these considerations we believe it appropriate that all FAW in Bangladesh move in the near future to fully implement the WFP/ILO agreement on in kind wage payment at 50% cash - 50% food. See Annex 11.

B. The appropriate wage level

Equally inherent in whole or partial payment in food is the problem of determining the value to be placed on the food portion. This is important in two regards. First, the value needs to be known for the planning for individual FAW schemes. Second, the value needs to be known for evaluating the attractiveness of the employment as against other employment. This is critical in setting either a daily wage or item rates with a view to achieving target daily earnings.

On the first point, the practice is established. WFP and GOB set a taka value -- we call it the X Value -- at which programme wheat is valued. To be clear, the X Value is not the OMP or the OMS, both of which are typically higher than the X Value.²¹

²¹ OMS is in principle always lower than the OMP as it is the price at which government sells wheat on the open market with the object of stabilising prices when the market price is deemed too high.

The mission does not recommend a change in practice with regard to the *X* Value. We note, however, that the proposed changes in the remuneration system highlights the importance of the *X* Value in relation to the OMP. As suggested in Diagramme 1, any remuneration value curve which reflects partial food payment calculated at the *X* Value will shift upward or downward as the *X* Value is increased or decreased. This relates to the targeting objective.

Addressing the second issue, the survey found that on average across the non-forestry sectors and across the country labourers reported daily earnings at about 6¾ kilos.²² How much is this worth in taka to the labourer, particularly as compared to other cash paid employment available to him or her? We can make a *very rough estimation*.

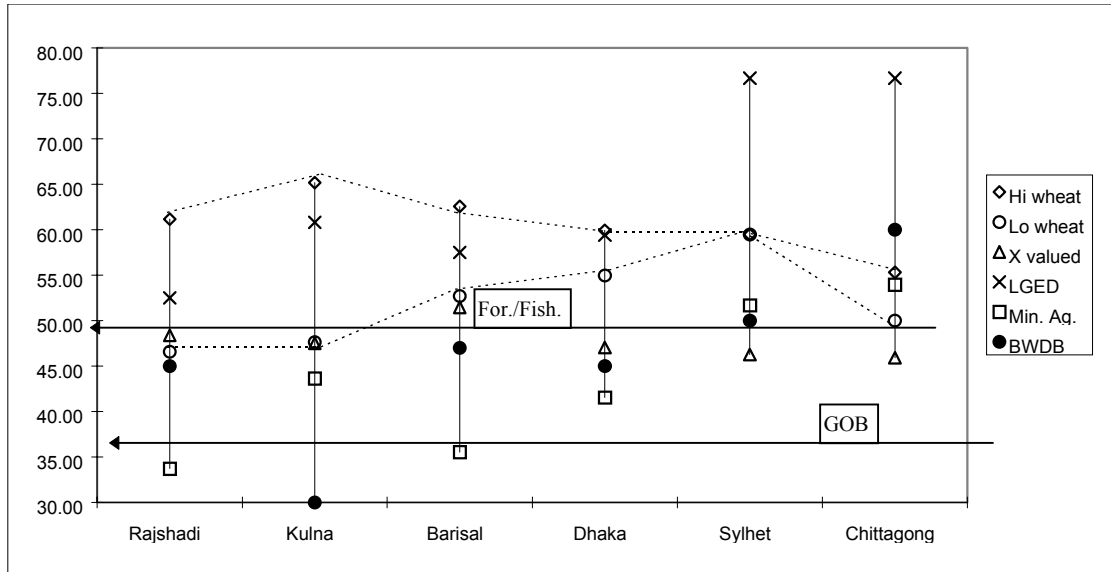
Chart 3 below shows the range of taka values labeled “hi-wheat” and “lo-wheat” assigned to the average daily food earnings of the FAW labourer in the six divisions of Bangladesh. The values were established on the basis of *one taka less* than the high and low GOB Food Grain Survey market prices during the period January to March 1997.²³ Also shown are various possible daily labour wage comparators, including the LGED and BWDB unskilled labour element rates,²⁴ the GOB daily unskilled labourer rate (36.53 taka), the daily unskilled labourer rates applied in the fishery sector and forestry sector (50 taka) and the average minimum agricultural wage for which the respondents reported themselves willing to work.

CHART 3. VARIABLE VALUE OF DAILY WHEAT EARNINGS AND COMPARABLES

²² This is contrasted to 5.37 in the water sector, 4.87 in the road sector, and 3.46 in the fisheries sector, published in “Information on beneficiaries, 1994/95 work season”, WFP document. We note that observed productivity show that it is quite possible that labourers are producing sufficiently to earn on average 6¾ kilos daily. Recall Table 2 above. Whether they are in reality taking home earnings of the magnitudes suggested by the WFP and misrepresented the amount of their earnings to the survey enumerators is relevant to the issue of whether the workers are getting paid what they should, and somewhat less so to the issue of wage setting.

²³ One taka was selected as 50% of food transforming labourers reported their sale of wheat at 1 taka below their perception of the market value; 27% said their sale was 2 taka less, and the remainder gave various other figures.

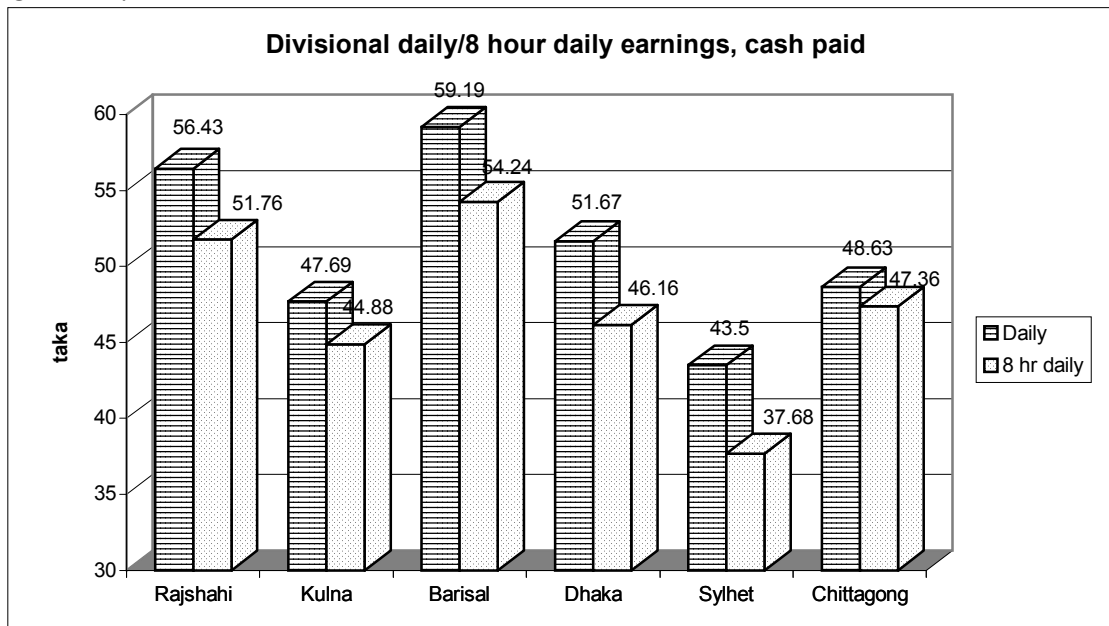
²⁴ The LGED and BWDB are the daily rates which would be used in estimating a project where a contractor is expected to purchase one day of unskilled labour. The rate is not a wage which the contractor is mandated to pay.



The range of estimated value of the remuneration seems high. This is so considering particularly that 81% of labourers believed they would have been able to find replacement employment within a week of leaving a FAW job, and 60% of these thought the employment would be as good as the FAW job. Note also the low level of wage at which labourers indicated they were willing to take a job in agriculture in the Divisions other than Sylhet and Chittagong.²⁵ These factors suggest that the value estimation attempted here, though economically rational, may be *too* high. We can compare the range of estimated values in Chart 3 with the reported full daily earnings of the FAW labourers paid in cash, and the daily earnings of the same labourers adjusted for an 8 hour day (less than they reporting typically worked) shown in Chart 4. below.

²⁵ The inconsistency caused by a variable-valued wage in relation to the labour market cash wage is shown in the Chittagong and Sylhet data. In these near-port areas the wheat price is low, yet the relatively strong economic activity and demand for labour pushes the price of labour up. The result is a gap between the going rate and the lower valued FAW food-paid wage.

CHART 4.



* The 8 hour calculation is based on calculated hourly rates, based on reported daily earnings divided by reported daily hours of work in each case.

This exercise points out that a wage stated in kilos of wheat makes it difficult to gauge the attractiveness of the work in relation to jobs paid in cash, and the more so when the wage is 100% paid in wheat. In addition, FAW schemes in Bangladesh are estimated in kilos of wheat. This practice of wheat-priced work norms effectively places *variable values* on units of labour and productivity, and individual FAW schemes. This system runs parallel to the system of costing CFW projects which provide the same FAW labourers with cash paying jobs. It is desirable that the approach change to a system which does not incorporate the variable values of wheat. Considering the GOB/WFP agreement on the blending of cash and food in the payment of wages, it would seem that the appropriate time for such a change would be the present. The effect of fixed-value (taka) based estimation vs. variable-value (food) is seen in Diagramme 1. Lines C and D there show that a fixed-value based system results in a downward sloping remuneration value; as the price of wheat goes up, the value of remuneration for a given productivity goes down. In economic terms this approach could make the FAW job less attractive in comparison to higher paid cash wage employment as the market value of wheat goes up, increasing the self-targeting mechanism if the commodity price goes up.²⁶ Following on this, we recommend that a set daily wage for a set quantity of work be stated in taka. How much would this daily wage be? And how much work would be expected for it?

²⁶ Granted, a portion of the system remains subject to pricing under the *X Value*. We say “could” because we believe the value of remuneration would have to be reduced dramatically and unacceptably, to effectively dampen demand for FAW jobs in the context of Bangladesh’s poverty and employment situation. Consider the daily earnings of the cash paid FAW workers in Sylhet and Chittagong, reporting in both cases daily earnings of about 10 taka less -- between 17% and 20% less in the respective cases -- than the daily wage observed by BBS, discussed below. The mission has heard anecdotal references pertaining to these two areas of some difficulty in finding labourers to work on schemes.

Looking for an appropriate comparator, from Chart 3 above it can be seen that the LGED daily rate is high in relation to current wheat earnings at the *X* Value and the hi and lo market values. The GOB minimum wage rate in the public sector is too low and the same across divisions.²⁷ Looking to the respondents' minimum acceptable daily wage in agriculture, we see rates within a band which seems close to appropriate, somewhat lower than the estimated value of the food wage presented in Chart 3. Looking for an official comparator, we observe the series called "average daily wage rate of agricultural labour without food (meals) and with food by greater districts and by sex" published in the Monthly Statistical Bulletin, Bangladesh by the Bangladesh Bureau of Statistics. In practice, the Bulletin appears to be published semi-annually, the most recent available to the mission having been published in June 1996 with data up to and including December 1995.²⁸

Taking into account BBS's different *observed* labour costs -- with a high of 70 taka daily in Chittagong to a low of 31 taka in Dinajpur -- as well as differences observed between the divisions in the survey,²⁹ it is proposed that divisional figures be used for the daily wage rate. With the exception of the figures for Chittagong and Sylhet, these figures would be right in relation to current 8 hour per day cash earnings seen in Table 4 below, i.e. not representing a dramatic change in daily earnings for most labourers.³⁰

TABLE 4. AVERAGE DAILY WAGE RATE OF AGRICULTURAL LABOUR BY DIVISIONS (DECEMBER, 1995), WITH CURRENT EARNINGS			
Division	BBS average (tk.)	Average 8 hour day, FAW (paid in cash)	Average taka value of 8 hour day, FAW (paid in food)H
Rajshahi	36.00*	51.80	49.70
Khulna	42.30*	44.90	52.80
Barisal	46.00*	54.20	53.50
Dhaka	43.50*	46.20	56.10
Sylhet	53.00*	37.70	53.20
Chittagong	57.80*	47.40	51.30
OVERALL	45.00**	47.00	52.80

*Note: *Calculated regional averages based on the most recent data, December 1995, published in Monthly Statistical Bulletin, Bangladesh June 1996. Figures have been rounded to the one/tenth taka.
** This figure is directly from the source; it is not the calculated average of the figures above.
H Average daily kilo earnings of the FAW labourers in the Division multiplied by one taka less than the average of the hi-lo wheat values in the Division, divided by the average FAW daily hours of work in the Division, multiplied by 8 (hours).*

²⁷ See section 2.4 of Part III of this Report for information about this rate.

²⁸ The RMP used this comparator to set its current daily rate at 34 taka per day. We do not suggest this rate. It is perhaps justifiable in the context of the RMP's programme of four years contract of full time cash paid employment targeted at 6 working hours daily, plus training benefits.

²⁹ We need not address the more complicated issue of whether the differences exist because of possible factors reducing productivity (which assumes that remuneration is actually being made on the basis of productivity) or factors affecting the going daily price of labour. Intuition would suggest that in both cases geographic differences would predominate over sectoral. This is desirable for administrative reasons as well.

³⁰ This comparison is *not* to say that the proposed daily rate is for fixed 8 hour day. This is *not* the case. The daily rate is *for the targeted productivity* discussed below, which has been calculated to be achievable for most within eight hours.

Referring back to Diagramme 1, lines E and F have been plotted on the basis of daily wage set at 45 taka. The daily productivity for these lines is established independently as described in further detail below.

C. Organization of scheme estimation

Assuming adoption of a fixed-value based estimation system for FAW, a natural group of item rates for estimation would be the system used in CFW earthwork. Currently there are some 25 different sectoral and area specific rate systems being used by the various GOB implementing agencies.

Scrutiny of the CFW systems show a valuation of labour in terms of target daily wages and observed productivity much higher than that currently in FAW. Table 5. below is representative of the situation in the other sectors. It shows daily earnings computed on the basis of observed FAW labourers' daily productivity, priced under BWDB CFW mechanisms and assuming that the estimation figures are also used as the basis for productivity-based wage. The estimation rate/wage rate link is the current practice in FAW. The conclusion, shown by comparing the final column with various figures of actual daily earnings discussed above, is that estimated scheme costs -- if passed directly on as wages -- would produce daily earnings far in excess of the comparator. Using the CFW systems must be ruled out.

TABLE 5. DAILY EARNINGS OF FAW LABOURERS AT OBSERVED PRODUCTIVITY, USING BWDB RATES AND IMPLIED PRODUCTIVITY						
Division	BWDB O & M Circle	BWDB Unskilled Daily Labour rate¹ (1)	BWDB rate /M³ (2)	BWDB assumed daily productivity [(1) / (2)] (3)	FAW labourers' observed daily productivity² (4)	FAW labourers' daily earnings at BWDB rate [2 x 4] (5)
Rajshahi	Rajshahi	45.00	29.18	1.54M ³	4.14M ³	120.81
Dhaka	Mymensingh	45.00	29.14	1.54	3.94	114.81
"	Comilla	45.00	29.14	1.54	3.94	114.81
"	Faridpur	45.00	29.13	1.54	3.94	114.81
Barisal	Barisal	47.00	30.48	1.54	4.12	125.58
Khulna	Teesta Barrage	30.00	19.56	1.53	4.36	85.28
Chittagong	Chittagong	60.00	38.9	1.54	2.61	101.53
Syhlet	Syhlet	50.00	31.95	1.56	3.12	99.68
<i>Notes:</i>						
1. Rate paid to a contractor for one day of unskilled labour; not necessarily the amount actually paid to the labourer.						
2. Extracted from Table B1 of HCL survey report May 1997 in "soft" soil conditions. All results as observed average 0.49M ³ /hr and an 8.12 hr working day.						

The simplest and most appropriate approach would be to calculate the quantities involved in a scheme and divide it by established rates of productivity expected in a normal work day, resulting in a number of worker days per scheme. By multiplying the worker days by the established daily wage rate for the division, a taka value for the scheme is set. The final step is applying the 30/70 blend, using the established *X* value for the price of wheat.

The proposed new estimating schedule replaces kilos with *worker days*. Based on the productivity survey and other available productivity records, the target daily productivity per person (no distinction is made for male or female workers) is set per activity for:

- ordinary basic earthworks: 1 worker day is 4.0M³ under ordinary soil conditions, with 50M lead and 3M lift, as measured in the borrowpit;
- hard basic earthworks: 1 worker day is 3.0M³ under slushy and hard soil conditions, as measured in the borrowpit, with 50M lead and 3M lift; and
- shaping, clod breaking and compaction: 1 worker day is 4.5M³ under all soil conditions, subject to strict quality control measures.

It is to be noted that new maximum lead and lift figures are incorporated to reflect the typical situation found in the survey and also confirmed by the IFADEP project as applying to their work over the past 2 seasons in the road sector. Additional lifts and/or leads *outside* the new maximums will continue to attract an additional 10% of worker days per each additional (15m) lead or each additional lift (1m) in the estimation.

The recommended quality assurance controls for compaction are included in Annex 8. The compaction item is intended for fisheries and water schemes, and rural roads type R2 and R3 only. FRB should utilize mechanical compaction methods only, however the use of an LCS to undertake this work using labour intensive methods should not be entirely excluded particularly if the LCS is a group of professional compactors who can produce good results. The shaping, clod breaking and compaction rate is based on a relatively small sample of clod breaking and compaction results from the productivity survey, as well as observations of IFADEP and CARE.

The activities related to the supervisory and coordination work of the SIC/PIC and LCS are separated out and consolidated. The current allocation for the supervision work of the sardar (5%) and supervisor (1%) has been retained in the process of consolidation and a further 1% has been added for the work of the PICs in ensuring that quality standards are achieved. This additional 1% should be paid only if the GOB engineer certifies that the work meets the necessary standard. The dewatering fee to a maximum of 1% is likewise payable, but only upon the certification of the GOB engineer.³¹ During the field survey dewatering activities were found on one site only.

It will be noticed that certain items in the existing estimating guides are not included. Clearing and benching as well as lead paths become part of the earthworks methodology. These minor items have been observed in the survey as not usually being carried out. Setting out, however, will become a responsibility of the sardar

³¹ During the field survey dewatering activities were found on one scheme only. Other evidence suggests that the PIC monetizes this allocation to hire a mechanical pump.

and supervisor under the guidance of the GOB engineer and an important issue to be included in any training programme.

The consolidated estimations schedule follows below in Table 6, and an example of the costs of practice appears in Annex 10.

TABLE 6. CONSOLIDATED SCHEDULE OF RATES FOR FOOD ASSISTED WATER, ROAD AND FISHERIES SCHEMES, EXPRESSED IN QUANTITIES PER WORKER/DAY				
Code	Description	Measure	Daily output	Explanation
1.1	Basic Earthworks in ordinary soil conditions. (50m lead & 3m lift)	M ³ (in borrow pit)	4 M ³	Incorporates extended basic lead and lift and includes all specified clearing & benching work.
1.2	Basic Earthworks in hard ¹ or slushy soil conditions (50m lead & 3m lift)	M ³ (in borrow pit)	3 M ³	Incorporates extended basic lead and lift and includes all specified clearing and benching work.
1.3	Additional leads (0.3m to 1.5m)	LM (beyond 50M)		Applies for every complete 15m beyond 50m
1.4	Additional lifts (0.3 to 1.0m)	LM (beyond 3M)		Applies for every 1m above 3.0m
2	Clod breaking, spreading & compaction.	M ³ (completed in the fill)	4.5 M ³	New basic rate for all soil types. Rate includes leveling and benching and penalties apply if minimum standards not achieved ²
3	Turfing & planting special grass species (All leads and lifts)	M ²	25M ²	Revised turfing rate and targeted at attracting women workers under separate contracts
<p><i>Notes:</i></p> <p>1. Hard being defined as having an unconfined compressive strength of >400Kn/m².</p> <p>2. 80% MDD full payment, 75-80% MDD only 50% payment. This penalty applies to the scheme, not to workers. Observation shows that proper gang balancing and properly supervised workers can achieve compaction up to standard. A leakage problem arises if, in the context of weak supervision, a penalty is assessed against workers and not the scheme.</p>				

D. A “fair day’s work” and communicating the wage to the PICs/ SICs and workers

The proposed method simplifies the present system in a way which will bring greater transparency and understanding to the work by focusing the technical and supervisory staff attention on the key fundamental activities and the need for monitoring and achieving acceptable quality standards.

Central to any change of arrangements relating to the estimating and payment basis is the need to ensure that the changes are clearly understood and acted upon in the manner intended. The signboard practice must certainly continue. In addition, it is recommended that information on conditions of employment be prepared as a one page “conditions of employment” circular published by the implementing agencies applicable to all work sites and including the specific information relating to the approved food and cash package applicable to the particular site. Each worker could then take home his project information and obtain assistance in having the information explained.

Further clarification of working conditions could also be provided by mass meetings of labourers called by the implementing agency prior to the beginning of

work on any scheme. Labourers' entitlement and work obligations can be clearly set out and questions asked and answered There. Briefing or training sessions on labour entitlements and work obligations will be an important issue for including in the training programmes proposed by the mission for the sardars and the supervisors.

The minimum content of the signboard should include the following.

DAY TASK WORK

4.5 Kgs WHEAT and 13.50 TAKA DAILY³²

**THIS FOOD ASSISTED WORKS SCHEME IS ESTIMATED TO INVOLVE
51,503 WORKDAYS OF EMPLOYMENT.
WORK WILL BEGIN ON 1st JANUARY 1998
AND END BY 15th APRIL 1998.**

It is expected that each worker, **in his or her group**, will produce:

- **4 CUBIC METRES OF ORDINARY SOIL EXCAVATED PER DAY**
(measured in the borrow pit and with lead up to 50 metres and lift up to 3 metres and placed in 15cm layers)

or

- **3 CUBIC METRES OF SLUSHY OR HARD SOIL EXCAVATED PER DAY**
(measured in the borrow pit and with lead up to 50 metres and lift up to 3 metres placed in 15cm layers)

or

- **4.5 CUBIC METRES OF LEVELED, SHAPED, CLODS BROKEN AND COMPACTED PER DAY TO STRICT SPECIFICATION**
(leveling, benching and shaping to engineers specification, clod breaking to 25mm size and compaction to engineer's specification in 15cm layers).

YOUR SARDAR IS RESPONSIBLE FOR ENSURING THAT HIS OR HER GROUP MEETS THE PRODUCTION TARGET FOR WHICH YOU WILL BE PAID.

IF YOU DO NOT MEET THE PRODUCTION TARGET YOUR CONTINUED EMPLOYMENT CANNOT BE ASSURED.

IF YOU EXCEED THE DAILY PRODUCTION TARGET, YOUR SARDAR MUST PAY YOU PROPORTIONATELY MORE AT THE NEXT PAY DAY.

NO DEDUCTIONS FROM THIS DAILY TASK WAGE ARE TO BE MADE. THE SARDAR, PIC, AND SUPERVISOR ARE PAID SEPARATELY.

There may also be other minor works variations on site such as extra leads and lifts and de watering for which the PIC/LCS have been informed and necessary at certain locations. The PIC/LCS will have been given a provisional 1% for dewatering work. It is not useful to clutter the sign with this information but it could be included in the "employment conditions" handout. Similar signs will be necessary for the turfing or grass planting works which are recommended to be undertaken as separate contracts.

The new system institutionalizes the "de facto" day works/time based payment system, but modifies the practice by establishing both what the labourer is expected to

³² Assuming a daily taka wage of 45.00 at 30% cash, 70% food blend, X Value = 7 taka.

do in a day and, *very clearly*, the amount he or she will be paid for it. This is a task work system commonly used in labour based works.

Workers may want to work more than one task in a day, undertaking say 1.5 tasks in agreement with the sardar.³³ This is feasible. It reintroduces, however, undesirable complexity into the payment calculation. Group work is the rule in earthworks, and actual payment of wages is not always regular and certainly not done daily. Without diligent day to day supervision and setting out of the daily work -- something clearly lacking on the observed schemes -- we fully expect that the pattern of accumulating production and associated payment will continue. Thus, the critical addition under the new approach is a clearly stated *daily* earning.³⁴ We anticipate productivity will be self-regulated by group demands for more or less work in relation to current habits, i.e. if workers think they are working too hard for the amount they now know they will clearly get for a day's work, they will demand of the sardar to work less -- but the sardar nevertheless remains responsible for achieving in aggregate the quantities for which the workers have been paid. Where labourers overproduce in relation to the amount paid for in their daily wage, the sardar is responsible for distributing the balance. In this manner, the idea of a measure-up is retained, and the responsibility for workers -- or their sardar -- assuring themselves of appropriate payment continues with the labourers. If labourers under produce in relation to the amount paid in their daily wages, the sardar will be held responsible.

We reiterate that our recommendation specifically takes into account the following observations:

- the large majority of workers already work 8 or more hours per day;
- based on physical observations, the quantities indicated can be produced by 100% of labourers within a day, perhaps taking some groups 7 hours and other 10;
- provision is made for payment in excess of expected productivity and no limit is placed on hours of work;
- concerns about women's daily earnings are obviated by stating the daily rate applicable to all;³⁵
- responsibility is formally placed on the sardar -- where it already exists in practice -- to ensure that the workers produce the amount required for payment;
- the responsibility of workers to protect their own interests by understanding the payment system and quantities involved *remains* with the workers, with the exception that they are assured, subject to minimum production, a daily wage.

³³ We observe that when asked 38% of workers currently want to work more hours, despite the already *reported* long hours.

³⁴ Which relies on the studied and observed capacity of groups to actually set out, do, and measure the quantity involved. The daily earning is necessarily actually paid at the end of the day; this is not to be implied.

³⁵ Productivity surveying of all women's groups needs to be done to ensure that the productivity expected does occur, thus removing any possible justification for less than the full daily payment. If it does not occur, consideration would need to be given to adjusting the size of the daily task.

It is possible that the wage minimum may, for some groups, become a wage maximum. In the absence of higher levels of day to day supervision which might better guarantee that workers are paid what is due, or higher levels of literacy and numeracy such that workers have a better understanding of a piece rated system of wages, it is felt that the recommended approach will *overall* improve the chance that labourers receive more of their due entitlement than they do at present. Furthermore, the suggested work norm and wage system may, in any aspect, be revisited and adjusted, i.e. work norms increased or decreased, food/wage blend modified, *X* Value adjusted, daily wage increased or decreased, amalgamated, or re-based. Finally, the link to production is maintained as payment is conditioned upon it.

E. The forestry sector

The approach to scheme costing and remuneration in the forestry sector is different from those involving earthworks. An amount of the daily wheat wage is fixed at 5 seers or 4.67 kgs., and 3 kgs. for mulberry plantation, according to the implementation methodology. The Operational Contract says 4.50 and 3 kgs, respectively. The link with productivity does not affect the amount of the daily take home food wage. As we have proposed for the other sectors, in forestry the amount of obliged production (the size of the plantation) and the amount of the wage can already be varied independently. For this reason, the analysis in forestry is much more straightforward than in the other sectors. Nevertheless, the implications of the food based wage system are in some respects similar with the other sectors.

We note that the Operational Contract provides:

“the daily wage rate shall be equivalent to 4.5 kg wheat which will be paid in combination of wheat and cash at 70:30 ration; for mulberry tree plantation the daily wage rate shall be equivalent to 3 kg wheat,...”

The implication of the variable-based food wage are apparent. The caretaker is to receive 30% of 4.5 kgs of wheat in taka -- but at what taka value? The exchange rate could be set by the *X* Value, the OMS, or the OMP, with effects similar to those in the earthwork sectors on job comparability. The survey data seems to suggest that forestry workers are already somewhat more removed from the CFW labour market than the earthworkers. We suggest that this is a function of the full time nature of the job; perhaps also the characteristics of the caretakers. It is not so clear that this distinction justifies maintaining the food based wage. Depending upon the circumstances, i.e. increasing or declining commodity price values in relation to the *X* and other values, etc., the possible benefit of a cash based wage is protection of the value of at least a portion of the earnings. A recommendation to switch to a cash valued wage in forestry can be based on maintaining uniformity with a reorientation in the other sectors. And similarly for increasing the proportion of cash to food to fifty percent.

The more difficult question is the level of the wage. The basic issue is whether there is *convincing* evidence to suggest that in reality the caretakers are anything other

than wage labourers entitled to a wage on par with agricultural labour. We note the following.

- In forestry, the survey respondents on average said the minimum they would work for in agriculture was 27.69 taka. The sample was too small to consider by division. The valuation is also largely among women, underpaid in average daily agricultural labour by about ten taka according to BBS.
- Earnings are said to be forthcoming from plantations, but of the 6 schemes according to the group survey data, only one had realized earnings from trees. We have also heard of disputes between land owners and treetenders over the division of proceeds. Even if earnings are forthcoming, there is a substantial share taking.
- Some concern can also be expressed over the previous involvement of surveyed caretakers in previous FAW in the forestry sector.
- Preliminary inquiries with NGO's suggested no follow up evaluation available concerning the participation of previous FAW caretakers in the income generation of the plantation.

We could conclude that there is evidence to suggest caretakers are something other than wage labourers, but that it is not entirely *convincing*. Accordingly, we are bound to recommend that further field study be given to this group, along the lines suggested by the discussion above.

IV. Implementation

Assuming these proposals are accepted, the question of implementation arises. We see this as involving timing, modality, and monitoring issues.

The mission would suggest that the recommendations made here be implemented as widely and as quickly as possible. While we acknowledge the difficulty of adaptation and the uncertainty of some operational responses to these changes, we are certain that these solutions are conventional in the context of wider labour based practices. In this sense, they have been proven successful, provided appropriate daily supervision is given which, coincidentally, helps assure the production of quality infrastructure consistent with the SIFAD mandate and the movement of FAW away from relief activities. We are equally certain that for all the reasons elaborated above the sooner the Bangladesh FAW is reoriented away from the "Kilo Currency" environment, the better.

We are bound to observe, however, that the content of Annex A of the Operational Contract of Expansion 10, specifically includes established work norms and wage rates. There is a further mention that "wage rates for pilot works shall be established with due regard to the established work norms but allowing necessary flexibility for undertaking new or experimental forms of activity". Being realistic, the best that

might be hoped for is the piloting of the new systems in IFFD, IFADEP and WFP supported activities.

As a final preliminary matter, we note that the blending of cash and food under Expansion 10 was not fully implemented during the 1997 work (dry) season as methodologies had not yet been put in place. This is not surprising as without a policy level decision on the issues developed above a conundrum over the “proper” valuation of wheat exists. In any case, a methodology for implementing the current blending arrangement will have to be worked out taking into account that it will be an interim measure, pending the shift to a taka based system.

Looking then at an opportunity for piloting during the January 1998 work season and full FAW implementation with the next project, the following work items could be envisaged,

- Immediately upon agreement in principle to the recommendations:
 - a) revision of the relevant sections of pilot planning and implementation methodologies;
 - b) selection of the scope of piloting;
 - c) design of monitoring procedures for the pilot schemes;
 - d) design of (or adoption/modification of existing) sardar and supervisor training materials;
 - e) productivity study of women workers;
 - f) productivity survey of forestry workers.
- Concurrent with the 1998 work season:
 - g) implementation of monitoring procedures;
 - h) evaluation of the piloting;
 - i) piloting of training of supervisors and sardars;
 - j) piloting of improved methods of compaction, purchase of testing equipment and hand towing or power tiller towed local concrete rollers.
- Following the 1998 work season:
 - k) finalisation of the planning and implementation methodologies;
 - l) revision of the relevant sections of the forestry implementation methodology in light of the survey and piloting;
 - m) finalisation of the training elements of the recommendation.

Following full scale implementation, normal monitoring activities piloted previously should suffice to maintain the system.

V. Conclusion: A system in transition

The mission cannot help but be struck by the fact that the introduction of the blending of food and cash in payment of wages, in concert with the SIFAD mandate, have already set the work norms and wages system of the FAW in Bangladesh on a

transitional course. This study has largely been about giving that course technical direction.

The basic recommendations are straight forward. They apply to all sectors, except where self-evident.

- switch to worker day estimation in earthwork sectors, using the revised and simplified work norms;
- calculate schemes in terms of taka, and continue determining wheat allocations in terms of the *X Value*;
- fix a daily task rated wage, based on the average agricultural wage in each division, and apply it without regard to gender;
- develop information materials and methodology texts to reflect the changes;
- maintain and increase rewards to scheme supervision in the earthworking sectors;
- provide greater supports to supervision in the earthworking sectors;
- separately contract turfing work to women;
- review in greater detail the situation of caretakers in the forestry sector;
- review in detail the working patterns and productivity of women workers in the earthworking sectors.

The challenge with recommendations is in agreeing their implementation and realizing the improvements they were aimed at achieving. This case is no different in this regard. In fact, the intricacies of implementation and reliance on a predictable response to institutional change is great in this case. We cannot overemphasize the importance of improving day to day supervision of FAW earthworks. Adjusting work norms and associated rates used in estimation with the intention of improving the allocation of worker time and effort *will have no affect whatsoever if supervision does not* redirect worker time and effort within group or redirect the work assignments of entire groups toward those work items which need more attention.

Should these recommendations be agreed, careful monitoring of their impact will be crucial in judging their success. With this in mind, a logical framework for monitoring has been provided in Annex 13.

Annex 1: Terms of Reference

Annex 2: Documents

I. PROJECT WIDE DOCUMENTS

WFP, Sustainable Development with Food Aid, Asset Creation: Human and Physical, WFP Food-Assisted Programme in Bangladesh in Collaboration with Bilateral Donors and the Government (June 1996)

Joint Government of Bangladesh/Donor Task Force on Strengthening the Institutions for Food Assisted Development, Final Report Summary, Ministry of Planning (July 1989)

WFP, Appraisal Mission, WFP-Assisted Project Bangladesh 2197 Exp. 10, Rural Development Programme, Conclusions and Recommendations (14 July - 8 August 1996) (Draft)

WFP, An Analysis of Food Aid Leakage Literature, (August 1996)

Operational Contract of WFP Project No. BGD 2197/10, Rural Development Programme, Between the GOB and WFP

WFP Bangladesh Country Programme, WFP/EB.3/96/7/Add.3 (23 September 1996)

WFP Project Summary, Project Bangladesh 2197 (Exp. 10)

Management Review cum Appraisal, WFP-Assisted Projects, Bangladesh 2197/VIII & IX, National Food-Assisted Works Programme for Land and Water Development and Rural Development Programme" (22 October 15 November 1993), Report of the Mission

Howe, John. "Infrastructure Investments in Bangladesh: Who Really Benefits and How?" IHE Working Paper IP-6, Fourth Workshop of the European Network of Bangladesh Studies, Driebergen - Zeist, the Netherlands, August 25-27, 1994

The Working Group on Targeted Food Interventions, "Options for Targeting Food Interventions in Bangladesh", April 1994

Ahment, Akhter U. and Shams, Yawark. "Nutritional Effects of Cash Versus Commodity-Based Public Works Programs (June 1994)

Self-Reliance for Poor Women: How Food Aid Plays A Key Role in Development in Bangladesh, Discussion Paper for the Asia and Pacific Regional Seminar in Celebration of WFP's 30th Anniversary, 17-25 March 1994, Beijing

Local Government Engineering Bureau, Comparative Study of Technical Quality, Rural Roads and Structures, Water Resources Schemes (Projects Implemented by BWDB and Local Government Engineering Bureau (July 1991)

Local Government Engineering Bureau, Local Government Division, Ministry of Local Government Rural Development & Co-Operatives, Intensive Rural Works Programme, Training of Trainers Course 1985

T.I.M. Nurunnabi Khan (ed). Labour Administration: Profile on Bangladesh (Second Revised Edition), ILO/Dhaka (1996)

Akhter U. Ahmen, Sajjad Zohir, Shubh K. Kumar, Omar Haider Chowdhury. "Bangladesh's Food for Work Programme and Alternatives to Improve Food Security", Paper presented at the Workshop on Employment for Poverty Alleviation and Food Security, October 11-14, 1993.

N. Noore Alam Sindigve. "Who gets what? An investigation into Rural Public Works Programme in Bangladesh", Social Science Review Vol. X, No. 2, University of Dhaka, Dhaka (1993).

The World Bank. Bangladesh Rural Infrastructure Strategy Study, (April 1996).

II. SECTOR DOCUMENTS

(a) Roads Sector

Planning and Implementation Methodology for LGED Sponsored Growth Centres Connecting Road (Earthwork) Programme Under WFP-Assisted Rural Development Programme, GOB Ministry of LGRD & Cooperatives (Local Government Division) (June 1995)

UNDP/ILO Project BGD/82/028, Report on Pucca Road Construction, Special Public Works Programme (September, 1984)

(b) Fisheries Sector

Planning and Implementation Guidelines (Methodology) for Fisheries Scheme to be Implemented by NGO/GOB Agencies under Rural Development Programme Assisted by the World Food Programme, GOB Ministry of Fisheries and Livestock, Department of (May 1995)

(c) Forestry Sector

Planning and Implementation Methodology for WFP Assisted Afforestation Schemes to be implemented by NGOs/GOB Agencies under Rural Development Programme, GOB Ministry of Environment and Forest, Bangladesh Secretariat, Dhaka (March 1995)

GOB Ministry of Environment and Forest, Implementation Guidelines for Afforestation Schemes to be implemented by Forest Department Under Food for Work Programme assisted by World Food Programme, March 1993

Rural Development Section, WFP, Forestry Sector Report, 1994-95 (September 1995)

(d) Water Sector

Planning and Implementation Methodology for BWDB Sponsored Food for Work Projects, GOB Ministry of Water Resources, Bangladesh Secretariat, Dhaka (October 1995)

Management of WFP-Assisted BWDB Programme, Handbook for Trainers, August 1996

Management of WFP-Assisted BWDB Programme, Handbook for Participants, August 1996

III. IFADEP II (FISHERIES) (EU) DOCUMENTS

Case Studies, Success and Failure in Rural Aquaculture for Ponds developed with Food for Work, 1 October 1996

IFADEP, Fisheries sub-project, Review of the financial returns to different aquaculture systems (May 1995)

Report on Baseline Study of Scheme Beneficiary (July 1996)

Global Work Plan (July 1995 to June 1999), Final Draft, 30.11.95

IV. IFADEP III (ROADS) (EU) DOCUMENTS

Activity Schedule 1996/1997 Financial Year for Senior National T.A. Staff

Compilation of Outputs from the IFADEP III Inception Workshop, July 20-24, 1995

Design Course - 1 on Earthwork and Hydrological Consideration for Road and Road Structures, Project Implementation Union, IFADEP, Growth Centre Connecting Roads, LGED

Lab Test Reports on Compaction (20/1/97)

"Local Government Engineering Department/IFADEP Tender Documents and Procedures (February 4, 1996), Volume I and Conditions of Tenders, Definition of Contract Terms, Specifications for Roads Bridges and Culverts, Project Implementation Unit, IFADEP

"Construction of 36M RCC Standard Bridge over Kalikadaha Canal on Bhramara-Dhanuaghata GCCR, Bhangura, Pabna", Project Implementation Unit, February, 1996

Financing Memorandum, IFADEP/GOB (24 July 1993)

IFADEP 3 Analysis of the Process and Content of the 1996 Annual Review and Planning Workshop (October 1996)

"Operational Manual, Financial Transactions Project Funds for Small and Large Structures and Mechanical Compaction on approved and started Schemes from 95/96 Annual Work Plan", Project Implementation Unit I6

"Report on Power Tiller Trial," Project Implementation Unit, IFADEP (May 1996)

"Small Structures Cost Analysis IFADEP Contracts Financial Year 1996", Project Implementation Unit, IFADEP

"1995/1996 Work Season Guidelines for Mechanical Compaction of LGED/IFADEP GCCR (February 5, 1996), Project Implementation Union, IFADEP

IFADEP Sub-project 3: Growth Centre Connecting Roads, Project Implementation Unit, Global Budget and Workplan (May 1995 to June 1999) (version 1.2) (December 1995)

IFADEP Sub-project 3: Growth Centre Connecting Roads, Project Implementation Unit, 1996/1997 Annual Budget and Workplan (July 1996 to June 1997) (December 1996)

Instructions of Earth Road Re-Construction Through LCS (IFADEP III, undated)

V. INTEGRATED FOOD FOR DEVELOPMENT PROJECT (CARE) DOCUMENTS

GOB Ministry of Local Government, Rural Development & Cooperatives (Local Government Division), Implementation Guidelines for the LGED Executed Rural Road Network Component (RRNC) of the Integrated Food for Development Project (IFFD), (December 1996)

GOB Ministry of Local Government, Rural Development & Cooperatives (Local Government Division), Planning Guidelines for the LGED Executed Rural Road Network Component (RRNC) of the Integrated Food for Development Project (IFFD), (August 1996)

Road Contractor Pilot: Concept Paper (July 2, 1996)

Annemarie Gerbrandy, Report on the earthwork laborers' survey, FY '95-96 (June 16, 1996)

VI. STATISTICAL REFERENCES

WFP, Bangladesh Foodgrain Digest, December 1996 (covering 1989/90-1996/7)

1995 Statistical Yearbook of Bangladesh (Sixteenth Edition), Bangladesh Bureau of Statistics

Annex 3: Meetings

World Food Programme

Alan Wilkinson, Country Director
Saeed A. Malik, Deputy Country Director
Bishow B. Parajuli, WFP Adviser, Rural Development
Hafizur Rahman, Project Officer (Forestry Sector)
Amir Khan, Project Officer (Roads Sector)
Syed Arefeen, Project Officer (Water Sector)
A.R. Siddique, Reporting Unit
M. Youmis Khn, Chief Training Programmes
Shah M. Murshiv, Training Officer

International Labour Office

Paul J. Bailey, Director
A.F.M. Jamiluddin, Programme Officer
B. Mondal, Programme Officer

UNDP

David Lockwood, Resident Representative
Richard Dictus, Assistant Resident Representative

CARE

Peter L. Nesbitt, Integrated Food for Development Project
Ekramul Kabir, Assistant Coordinator, Road Improvement Unit, IFFD
Kevin Fitzcharles, Training Coordinator, IFFD
Alex Counts, Road Improvement Unit, Contractor Project
Faruque Sarkar, Project Coordinator, Rural Maintenance Programme
Md. Jamannur Rahman, Assistant Project Engineer
Chris Perine, Technical Adviser, Technical Support Unit, IFFD

Integrated Food Assisted Development Project (EU)

Md. Maniruzzaman, Project Director
Bas W.E.M. Athmer, Chief Technical Adviser, Growth Centre Connecting Roads
Anthony Felts, Chief Technical Adviser, Fisheries
Md. Rezaul Karim, Senior Design Engineering Consultant

European Commission

Manjural Alam, Development Programme Officer

Local Government Engineering Department, GOB

Q.I. Siddique, Chief Engineer
Saroj Kumar Sarker, Superintendent Engineer (Planning)
F.J. Jung, Chief Project Engineer

RIDP 3

Ian Barwell, Consultant
Carl Berentsen, Team Leader

Rural Employment Sector Programme III

Jan Bergdahl, Senior Adviser, Infrastructure Development Project
Lars Hjerpe, Project Engineer

Rural Development Project - 16

Oyvind Homdrom, Chief Project Adviser
Md. Maliar Rahman, Executive Engineer

Directorate of Relief and Rehabilitation

Md. Fazlur Rahaman Khan, Director, FFW

Bangladesh Water Development Board

A.M. Safi, Chief Engineer (FAW)
M.D. Shahid Hossain, Superintending Engineer
Md. Quamrul Huda, Executive Engineer (FAW)
Md. Nazrul Islam, Executive Engineer (FAW)

Forest Department

Dr. Shamsur Rahman, Chief Conservator of Forests
Md. Nurussaman, Conservator of Forests, General Administration

Ministry of Labour and Manpower

M.A.S. Talukder, Director of Labour, Department of Labour
Md. Gorahim Karmal, Private Secretary
Mahe Alam, Secretary, Secretary
Shaikh Azizur Rahman, Secretary, Minimum Wages Board

Field Visits

Bagerhat

Rokonuddin Mamud, LGED Executive Engineer
Nazrul Islam, Thana Engineer, Sadan Thana
S. Sirayal Islam, PIC Chair, UP Rahdalguli
Fakir Tangul Islam, PIC Chair, UP Shatgumbuz
S. M. Abdul Wahab, Ministry of Relief
Md. Taifur Rahman, Sub-Division Engineer, Bagerhat O & M Sub-Division
Selim Ahmed, Executive Engineer, BWDB
Fakir Tarikul Islam, PIC & UP Chairman, Shat Gombing UP Bagerhat Sader

Khulna

Firoz Ahmed Sikder, Aquaculture Engineer, Department of Fisheries
Helal Uddin Ahmed, Assistant Engineer, Bul & Baor Project
Roy Harashit Kuman, Thana Fishery Officer, Jessour Sadar, Jessore
Md. Abdus Sattar, District Fisheries Officer
Executive Engineer, A.K. Barman

Majidpur

Md. Abu Bakr, UP Chairman and Project Chairman
CARE District Engineer

Jessore

Mr. Alamgir Hussaine, UP and PIC Chairman
Md. Mujibar Rahman, Chief Accountant, Tagarani Chalera NGO in Forestry
Md. Nunil Islan, Administrative Officer, Tagarani Chalera NGO in Forestry
Robindra Nath Dhar, Project Engineer, Tagarani Chalera NGO in Forestry
A.K. Barman, Executive Engineer, Bul & Baor Project, DOF
Abul Kashem, Executive Engineer, BWDB
Moslemuddin Howlader, DRO, Relief and Rehabilitation
Md. Abdur Razzique, PIO, LGED

M. Abdur Shadid, Executive Engineer, LGED

Keshabpur

M.D. Jaman, Project Engineer, CARE

Faridpur

Md. Mominur Rahman, Executive Engineer, LGED

Humayan Rashid, Assistant Engineer, LGED

Md. Mujibar Rahman Shikder, Thana Engineer Nagankandra

Bharat Chandra Nandar, Thana Engineer, Charandragan

Gokul Chandra Paroi, T.E. Atfadanga, Faridpur

Shamisul Arafin, Sr. DTO, Faridpur

Shah Alam, Area Manager, BRAC, Modhikhali

Farid Uddin Ahmed, Regional Sector Fisheries Specialist

Annex 4: Definitions

A **labour contacting society** (LCS) is a group of functionally landless people and destitute women who depend on manual labour as their main source of income and who do not own and/or operate more than 0.5 acres of land. To promote LCSs under IFADEP-GCCR, a number of GCCRs will be re-constructed using LCSs. LCSs will work on a contract basis. (source: IFADEP III, "Instructions of Earth Road Re-Construction Through LCS")

A **project implementing committee** (PIC) is a community group charged with the individual and collective responsibility for execution of a FAW scheme. Requirements for its composition are included in each sector's planning and implementation guidelines. A **scheme implementing committee** the name used for a similar functional group under CARE planning and implementing guidelines.

The **rate** is the amount of money/food associated with a quantity of output, the doing of which by a worker or a team of workers earns that worker or team of workers that amount of money/food. Thus, the rate of 5 kgs per 10 cubic meters means that a worker will receive 5 kgs of wheat for the excavation of 10 cubic meters of earth.

A **targeted take home wage** is an amount of earnings which a worker should be able to earn by working on a scheme, set in accord with programme objectives. Depending on the arrangement of the remuneration system, the targeted take home wage is (a) guaranteed (where a fixed task is set out and completed each day, yielding a fixed daily wage but a variable number of working hours) and (b) statistically achievable (where the measurable work units and wage rates are established based on time studies such that the average worker can complete the task or tasks in a variable working hour day, yielding daily earnings equal to or more than the targeted take home wage).

A **task** is the amount of work which must be completed in order to receive a payment. When the size of measurable work units (square meters, cubic meters, etc.) are small they are called **pieces**, and the remuneration system which pays on the basis of pieces accomplished is a **piece work** system. Likewise, a remuneration system which pays on the basis of accomplished tasks is called a **task work** system.

A **wage**, as used in this document, is something of value given in exchange for work. Under FAW in Bangladesh wage it is meant to mean wheat. This definition is contrary to international usage of the term. Properly used, a wage is a counter-payment for work to be made in cash, which may be partially replaced by a payment in kind under certain conditions. These conditions have been agreed between the ILO and the WFP, and are discussed in Annex 11.

Monetization is conversion by the authorities of food destined for use as remuneration.

Transformation is conversion by individual labourers of food individually received by them as a part or the whole of remuneration.

The ***X-value*** is the value in taka assigned to a kilo of wheat (or other commodity) for the purpose of FAW planning and estimation of FAW schemes. It may be higher or lower than the observed market sales or buying price.

A ***square up*** is payment made to a labourer which represents the balance due over advances on wages made as a result of measurement of production.

A ***measure up*** is a measurement of earth quantities moved and placed, and other work items where appropriate, upon which a remuneration calculation will be based, i.e. quantity x item rate = wage.

OMP is the observed, open market price of a food commodity. WFP Bangladesh Foodgrain Digest.

OMS is open market sales price. WFP's Bangladesh Foodgrain Digest defines it as "government sells wheat or rice (monetized channel) in the open market at a fixed price without subsidy to check price hike." It is effectively the price set by government for its sale of commodity stocks for purposes of price stabilization.

The following ***soil conditions*** are referred to in the report. ***Soft soil*** is easily moulded, a depression can easily be made with the thumb. ***Hard soil*** can be moulded with difficulty, a depression can only just be made with the thumb, in engineering terms having an unconfined compressive strength of $>400 \text{ kn/m}^2$. ***Slushy soil*** is saturated soil well in excess of optimum moisture content.

A ***seer*** is a Bangla unit of measure. One seer equals .93 kilos.

Annex 5: Tables for the forestry sector

TABLE 5-1. REPORTED PAY IN THE SURVEYS SCHEMES					
Scheme	Impl't. Agency	Care takers (n =)	Type ³⁶	Reported pays (<i>monthly</i> or <i>daily</i>) (taka)	Calculated average daily earnings (kgs) ³⁷
1. 060121	BRAC	85	Rd-M	m90	3
2. 250411	GSS	20	Rd-O	m150	5
3. 400803	BUK	40	Rd-O	m120	4
4. 590602	FD	10	Bl	m130, m135, m150, m155	4.6
5. 620201	FD	37	Bl	m150, d5, d7	5.4
6. 780284	CCDA	40	Rd-O	d5	5

TABLE 5-2: YEAR OF EMPLOYMENT IN WHICH THE CARE TAKE IS ENGAGED			
Scheme	In year one	In year two	In year three
1	2	8	-
2	-	-	6
3	-	-	10
4	4	6	-
5	1	7	2
6	4	1	-

TABLE 5-3: HOURS OF WORK AND EARNING SOURCES, BY YEAR OF EMPLOYMENT

I.

AVERAGE HOURS DAILY, NON-MULBERRY, ALL NGO/GOB		
In year one (n= 9)	In year two (n=14)	In year three (n=18)
7.56	9.43	9.11

Thinking that caretakers may work different daily hours in NGO implemented schemes, we looked at the situation there. The sample size is too small for conclusions, but it would seem plausible that complementary NGO programmes occupy caretaker time.

II.

AVERAGE DAILY HOURS, NON-MULBERRY, NGO ONLY		
In year one (n=4)	In year two (n=1)	In year three (n=18)
6	6	9

³⁶ Rd = Road side plantation, Bl = Block plantation; M = Mulberry, O = other.

³⁷ Calculated from the stated monthly or daily earnings, divided by the number of days worked weekly, assuming a 30 day month.

III.

Engaged in secondary occupation, by year of employment and work season, non-mulberry, all NGO/GOB			
	In year one (n=9)	In year two (n=14)	In year three (n=18)
Jan - April	22%	14%	11%
May - June	22%	21%	6%
July - Dec.	33%	14%	11%

IV.

AVERAGE MONTHLY EARNINGS FROM SECONDARY SOURCES, ALL NGO/GOB SCHEMES		
Jan. - April	May - June	July - December
377 Tk.	317 Tk.	305 Tk.

Annex 6: Charts

Annex 7: Tables

TABLE 7-1. TABLE SHOWING ACTUAL WFP DAILY MEASURED PRODUCTIVITY PER DIVISION AND CIRCLE AND ENTITLEMENT OF PAYMENT IN KG OF WHEAT DETERMINED FROM THE WFP ESTIMATING MANUALS.

Circle	Division	WFP daily output ³⁸ in M3 as measured in 3/97 survey	WFP Workers daily output assessed in kg (1) Using the current WFP estimating norms ³⁹
Rajshahi	Rajshahi	4.14M3	8.56
Mymensingh	Dhaka (North)	3.94	8.15
Teesta Barrage	Khulna	4.36	9.02
Barisal	Barisal	4.12	8.52
Comilla	Dhaka (South)	3.94	8.15
Chittagong	Chittagong	2.61	5.40
Sylhet	Sylhet	3.12	6.19
Faridpur	Dhaka (West)	3.94	8.15

TABLE 7-2: TABLE SHOWING ASSUMED BWDB PRODUCTIVITY DEDUCED FROM THE BWDB ESTIMATING SCHEDULES AND THE ACTUAL MEASURED WFP DAILY PRODUCTIVITY PER DIVISION AND CIRCLE.

Circle	Division	BWDB Unskilled Daily Lab rate (1)	BWD B rate /M ³ (2)	BWDB assumed daily productivity (1) / (2) (3)	WFP daily productivity ⁴⁰ (4)	WFP workers' daily earnings at BWDB rate
Rajshahi	Rajshahi	45.00	29.18	1.54M3	4.14M3	120.81
Mymensingh	Dhaka (North)	45.00	29.14	1.54	3.94	114.81
Teesta Barrage	Khulna	30.00	19.56	1.53	4.36	85.28
Barisal	Barisal	47.00	30.48	1.54	4.12	125.58
Comilla	Dhaka (South)	45.00	29.14	1.54	3.94	114.81
Chittagong	Chittagong	60.00	38.9	1.54	2.61	101.53
Sylhet	Sylhet	50.00	31.95	1.56	3.12	99.68
Faridpur	Dhaka (West)	45.00	29.13	1.54	3.94	114.77

³⁸ Extracted from Table B1 of HCL survey report May 1997 in "soft" soil conditions. All results as observed average 0.49M3/hr and an 8.12 hr working day.

³⁹ WFP basic rate of 1.42kg/M3, no extra leads, 3 extra lifts, clod breaking, spreading and partial compaction by hand @0.35/kg. (2.07kg/M3).

⁴⁰ Extracted from Table B1 of HCL survey report May 1997 in "soft" soil conditions. Results as observed average 0.49M3/hr and an 8.12 hr working day.

TABLE 7-3. WORK ACTIVITIES BY GENDER							
	<i>Activity</i>						
<i>Gender</i>	Earthwork	Carrying	Clod breaking	Leveling	Compacting	Turfing	Mixed
Men	63.6	30.1	2.2	1.2	.2	.2	1.8
Women	33.3	34.7	8.3	15.3	2.8	5.6	-

Note: In light of respondents' overwhelming preference for the earthwork activity, a higher proportion of women are engaged in the lesser preferred work activities.

TABLE 7-4. WORK ACTIVITY PREFERENCE BY GENDER							
	<i>Activity</i>						
<i>Gender</i>	Earthwork	Carrying	Clod-breaking	Leveling	Compacting	Turfing	Mixed
Men	42.1	20.4	2.6	4.0	1.7	1.8	24.6
Women	20.8	8.3	11.1	9.7	5.6	4.2	30.6

Note: It would not seem from the data that women would prefer to engage in "men's work", i.e. earthwork. Nor does it seem they have a strong preference to engage in the work activity to which many have been assigned, i.e. carrying. The "opportunity" option, i.e. mixed, interestingly predominates amongst women.

Annex 8: Productivity targets and standards for water, road and fishery schemes

1.0 The productivity survey results

During March 1997 House of Consultants Limited (HCL) a Bangladesh consulting firm conducted a productivity survey of 45 FAW projects operational in Bangladesh in the Roads(19 schemes and 36 sites), Water(18 schemes and 33 sites), Fisheries(8 schemes and 16 sites). The TOR for this consultancy and the questionnaire developed for the field survey are included in Annex 5. The schemes were selected on the basis of the 3 most severe WFP Poverty Indices and on the basis of a ratio of two schemes in the roads and water sectors for one in the fishery sector under a range of soil types.

All except one scheme surveyed were being implemented by Project or Scheme Implementation Committees (PIC/SICs). 95% of all of the schemes surveyed were construction or rehabilitation projects.

During the survey it has been possible to record actual numbers of labourers working on various activities each 15 minutes and to physically measure the volume or area of work involved, lifts and leads, as well, in the following work categories;

- Basic earthworks(borrow pit or pond excavation)
- Lift and lead (lifting, hauling and dumping)
- Clod breaking and manual compaction
- Benching, clearing and de weeding
- Other activities

In addition supplementary data was collected concerning soil condition, classification, moisture content, water management, quality of work, compaction, turfing, site management, as well as payments received.

The results of the survey have been tabulated by HCL by site and sector.

2.0 Methods used to determine earthworks productivity.

The survey results measure actual productivity on site under different conditions of soil type, soil condition, moisture content, varying lead and lift and other factors. The existing estimating schedules for various sectors (summarized at the end of this Annex) have also been taken into account.

For the purpose of the study it has been necessary to identify the most common conditions prevailing across the sectors and to establish a base from which to compare other results and factors.

From the data in the survey tables it is possible to determine the typical hourly productivity across the roads, water and fishery sectors by examining the most predominant soil condition (“soft”) which the survey confirmed as the basic or benchmark category of soil conditions in the three sectors

From here it was then possible to compare productivity under more difficult conditions, eg. where “hard” and “slushy” soil conditions were found , to those of the basic “ordinary” soil condition.

2.1 Determination of Earthworks productivity

2.1.1 “Ordinary” Soil conditions

“Ordinary” Soft soil was found to be the majority soil condition per sector as follows;

Soil Condition

Sector	Hard	%	Firm	%	Soft	%	Slushy	%	Total sites
Fishery	0	0	4	25	8	50	4	25	16
Roads	5	13	10	27	21	57	1	3	37
Water	1	3	3	9	27	79	3	9	34
Total	6		17		56		7		87

The following table identifies the individual productivity per person per sector in “soft” soil conditions.

This is important as in many cases, this gives a substantially different figure from that of the output per group where, irrespective of the hours worked by the individuals within the group, the group aggregates the “ productivity” or the total output that the group has produced and the group usually shares “payment” (in cash or wheat) equally amongst the group members.

Sector	Gang average Productivity	Individual Productivity	Average Hours worked	Average Daily Output in M3
Fisheries	0.40M3/hr	0.48M3/hr	5.53	2.65
Roads	0.42M3/hr	0.49M3/hr	7.47	3.66
Water	0.36M3/hr	0.49M3/hr	8.12	3.97

These individual productivity results provide remarkable uniformity and establish a basis for setting a basic standard.⁴¹ These results above are for all leads and lifts encountered. The justification for incorporating all leads and lifts together results from observed lift and lead variances being compensated for by the workers themselves in self regulating “personal” leads and lifts, although the results are somewhat erratic in this respect resulting from some sites being better “balanced” and better organized than others. The issue of the impact of lifts and leads is discussed further on.

⁴¹ These results also closely match the World Bank (Coukis) Technical Memo on Labour Intensive Programmes data, Table F-5, page 286.

2.2 Factors which influence productivity.

The following factors are known to influence productivity:

- site and environmental conditions;
- human factors (social and political);
- economic;
- management and organization;
- technology choice; and
- tools and equipment used.

On the basis of the survey results as recorded in the HCL report, it is possible to observe the effect of the following factors on productivity albeit with a small sample size:

- soil condition (slushy and hard);
- actual lead and lift;
- lead path condition;
- moisture content of the soil;
- site water situation;
- setting out;
- payment;
- site management;
- quality of slopes and cambering;
- adequacy and number of tools and baskets.

The survey data has shown that the major influence on productivity has been the soil condition although other factors as mentioned above have also had certain influence. The following section looks at the influence of soil condition on the question of productivity.

2.2.1 “Firm” soil conditions

To incorporate the “firm” category of soils with the “ soft” category is to introduce an unexplained further *increase* in productivity and has therefore been disregarded.

2.2.2 “Slushy” soil conditions.

“Slushy” soil conditions will however need to be considered as requiring a special rate as the observed productivity under “slushy” conditions is predictably less than that for “soft” soils. “Slushy” soils should however be an issue in Fishery and Water projects only as slushy soils are most certainly unsuitable for roads unless they can be dried and are of suitable quality. With the survey observing only one bailing operation (dewatering) it is also likely that with better planning dewatering and site management, the “slushy” soils could transform to the “soft” soil category in some locations.

Sector	Gang average Productivity	Individual Productivity	Average Hours worked	Average Daily Output in M3
Fisheries (4 sites)	0.15M3/hr	0.24M3/hr	7.37	1.76
Water (3 sites)	0.20M3/hr	0.21M3/hr	7.58	1.59

Observed productivity on this small sample is seen to be almost half that of the “soft” soil category. Currently WFP uses a special consolidated rate for basic earthworks in fisheries projects and this is appropriate for ponds of <2ha.

2.2.3 “Hard” soils

In the case of the “hard” soils category only 6 sites were observed as follows;

Sector	Gang average Productivity	Individual Productivity	Average Hours worked	Average Daily Output in M3
Roads (5 sites)	0.23M3/hr	0.39M3/hr	7.39	2.88
Water (1 site)	0.19M3/hr	0.23M3/hr	10.00	2.30

Some simple field test will need to be incorporated into the estimating methodology so as to avoid unnecessary misunderstanding over the inclusion of soils in this category.

2.3 Establishing the “ordinary” basic earthworks productivity rate.

The “soft” category of soil, being the most prevalent category in all sectors, provides the obvious basis for the minimum. On the basis of this survey, the base figure of 0.49M3/hr is therefore considered as appropriate for the establishment of the basic “ordinary” soil earthworks excavation and carrying rate for individual labour productivity under leads and lifts conditions as discussed below.

Clearly, in the case of both “slushy” and “hard” category soils, there is a justification for applying an extra rate over the basic rate for “ordinary” soft soil conditions at the estimating stage. There should however be careful identification of the extent of these soil conditions at the estimating stage as well as close supervision of the extent of these conditions during the execution of the works, so as to ensure that the correct rate is applied.

2.4 Lifts and leads

The average additional lifts and leads per sector under soft soil conditions were observed as follows.

Sector	Av. Additional Lead	Av. Additional Lift
Fisheries	Nil	1.4 but not applicable
Roads	<1	2.1
Water	<1	2.3

On the basis of the observed productivity and the lifts and leads involved, and assuming that the observed results are a reasonable representation of a typical day's output for those working in the "soft" soil conditions, then the workers should have received the following:

Sector	Basic rate	Av. Additional Lead rate	Av. Additional Lift rate	Total Rate. kg/M ³
Fisheries	1.81kg/M ³	Not applicable	Not applicable	1.81
Roads	1.42kg/M ³	0.15kg/M ³	0.20kg/M ³	1.77
Water	1.42kg/M ³	0.15kg/M ³	0.20kg/M ³	1.77

The observations regarding additional leads and lifts are further supported in the roads sector by the IFADEP projects monitored results which record an average additional lead of 1.63 in the Khulna and Rajshari divisions in the work season 1995/95 and 1.10 overall average additional lead in the 1996/97 season. The IFADEP results for additional lifts in the same seasons are 0.84 and 1.2 respectively.

The observed regular additional leads and lifts justify a simplification of the current estimating and measure up system by way of an adjustment to the basic lead and lift figures so as to also ensure that the workers benefit.

The basic minimum leads and lifts will be recommended as 50M lead (this will also encourage workers not to borrow fill from the toe of the existing embankments as is commonly the case and which results in unstable and steeply inclined embankment slopes) and 3m lift with a corresponding increase in the basic rate utilizing the existing WFP work norms.

This will also bring the WFP norms more in line with those of the Danida and Sida supported roads maintenance projects in LGED.

2.5 Recommendations for basic earthworks activities for the water, roads and fisheries sectors

A new basic day-rate of excavation in ordinary soil to be 4.0 M³ for ordinary soils and 3.0 M³ for slushy and hard category soils and these rates will involve a consolidated rate of payment for up to 50m leads and up to 3m lifts. All measurement will be from the borrow pits and form the normal basis for measurement.

Included in this rate is all clearing, removal of unsuitable and organic materials and benching (to LGED specs, max 150cm rises and 50 cm horizontal steps) work as specified in the existing standards and depositing the soil in neat layers so that clod

breaking , leveling and compaction in 15cm layers is possible. Also included is any haulage path if considered essential for the safety and efficiency of the work.

3.0 Shaping, Clod breaking and Compaction

The sample of clod breaking and compaction in the HCL survey is small and WFP should continue to monitor this activity and the related compaction results.

Based on the survey observations and the reported results from other LGED organizations using labour intensive methods for compaction work it has been possible to establish an interim target productivity for clod breaking and compaction taking into account the information in following table which summarizes the current payments per M3 of compaction by various agencies with assumed productivity.

Clod breaking and compaction payment by various agencies and projects.

Project	Payment Basis (Taka per M ³)	Target compaction (MDD)	Payment penalties <70% MDD	70% <75%	75% <80%
RDP 16 (Danida) ¹	11.25	80% MDD	No Payment	25% paid	50% paid
CARE ²	11.25	<p><i>Notes:</i></p> <p>1. Reportedly producing improved compaction results although the March 1997 testing results report 35% satisfactory results for earthworks in situ density in Barguna district, 3% satisfactory results in Patuakhali district. The overall testing result for in situ density is however only 12% in the period 1994 to March 1997. On the other hand the MDD subgrade results are 100% satisfactory and have been consistently so over the past 3 years.</p> <p>2. Based on 1.5kg per M³ converted at 7.5 Taka per kg.</p> <p>3. From an analysis of IFADEP 95/96 season results prepared by IFADEP and which also assessed the cost of mechanical compaction at 11.6Taka per M³</p> <p>4. Based on 3kg/9m² (or 2.2kg/m³ at 7.5 taka/kg).</p> <p>5. For Faridpur road maintenance project based on 0.1 labour at 51.75 taka per day for 1M³</p> <p>6. LGED Standard Specification and Schedule of Rates Part II (1986-90) Item 2.1.6.i costed at Manikjong District rate for 1994/95 season.</p> <p>7. LGED Draft document estimates 0.08 labour per day per M³. Assuming the daily payment rate of Taka 52 then the per M³ rate is 4.16 only.</p> <p>8. 1996/7 estimate TIDP II, Item 2-7(1).</p> <p>9. Schedule item 16-140-10 estimating 0.4419 workdays per M³ and a daily rate of 45 Taka.</p> <p>10. Excavation of tank section but 53 taka in Road and pavement works section item 1. which includes earthmoving.</p>			
IFADEP ³	10.50				
GOB ⁴ (MOR)	16.66				
RESP III (Sida) ⁵	5.10				
LGED Std Spec & Schedule of Rates ⁶	8.00				
LGED Draft Std & Schedule of Rates ⁷	4.00				
TIDP II Tangail District (GTZ) ⁸	21.00				
BWDB Circle analysis for Faridpur '96 ⁹	19.89				
PWD Schedule of Rates 1992 ¹⁰	26.00				

3.1 Field Observations

From the field survey it was found that there was clod breaking being carried out (i.e. in 17 of 37 roads sector sites) that in many cases there was found to be an imbalance between the earthmoving, clod breaking and compaction operations. The HCL report illustrates the relationship of the respective quantities being worked on such sites.

The HCL report also shows clod breaking and compaction as resulting in a range of productivity from less than 1M³ per hr to more than 3M³ per hr with erratic relationships although the higher the productivity usually the poorer the CBR result.

DCP tests were undertaken on only 16 of 37 roads sites as the fill was not being compacted on the rest. Of these, satisfactory CBR results were obtained on sites where mechanical compaction was being carried out (with CBR results up to 33). In the IFFD projects 3 of 10 results were satisfactory, 2 of 6 IFADEP sites were satisfactory, and in the WFP sites 3 of 23 results were satisfactory.

Clod breaking and compaction was not generally being carried out at all in the water projects except for 2 schemes where the “ productivity “ was as high as 3M³ per hr but the CBR values were less than 4.

The general practice on sites is for clod breaking and compaction to be seen as one activity. It is with this consideration that the mission is recommending a combined activity and also including leveling and shaping in the process as this will introduce an overall better site discipline and management and encourage a better understanding of the quantities involved as it will require working closely with the persons responsible for setting out.

The HCL survey reports an hourly clod breaking rate observed of 1.54M³ per hr. A review of the clod size data shows that, where it was taking place, it was not being carefully controlled, especially on the water projects, so that clods were often not of a suitable size for compaction.

To determine the volume of soil that can be compacted in an hr the specified depth of 15cm is used for a hand rammer of 0.015m² and assuming 5 blows on the same spot (to take account of clod breaking and compaction together) then a worker should be able to manage 20 blows a minute. This results in $0.015/5 \times 20 \times 60 = 3.6M^2$ per hour or 0.54M³ per hour and 4.3M³ per day. This appears to be reasonable along side the RDP 16 project arrangements where satisfactory results are reported for clod breaking and compaction on the basis of 11.25 Taka per day.

3.2 Recommendations

The mission is therefore recommending for both water and roads projects (except Feeder roads where the mission is recommending the immediate adoption of mechanical compaction methods) the adoption of a daily productivity target of 4.5 M³ of leveling, shaping, clod breaking and compaction to 80% MDD for the WFP supported schemes, with measurement made in the compacted fill. This is necessary as there will initially likely be an imbalance between the earthmovers and the compacters until at least the proposed training programme for sardars and supervisors comes into effect.

The adoption of the figure of 4.5 M³ as measured in the compacted fill also takes into account a net nominal bulking factor of 12.5% and enables a matching of the productivity of the earthworks and the compaction works. Ideally of course the sardar’s team should work as one integrated unit and with reasonable equality between the rates for earthmoving and leveling, shaping, clod breaking and compacting, then it will be possible to have job or activity rotation on projects without some workers feeling that they will receive less reward for their effort.

Important also is the responsibility for shaping, leveling and cambering of the work which should be part and parcel of a orderly site operation.

The mission also recommends that for the water and roads projects where labour based methods are to be applied then the specification to be applied for this work is that currently in use by the LGED RDP 16 project as described in the previous table.

Understandably this new payment and penalty for non performance arrangement can only succeed with much improved technical vigilance in monitoring and supporting the introduction of improved new work efforts and regular checks (eg. With the use of the DCP to indicate immediate on the spot results). WFP will need to secure the full support of the concerned GOB technical ministries and their partner technical agencies prior to the introduction of this new arrangement if it is to work.

4.0 Turfing and grass planting.

4.1 Survey information.

No turfing activities were being carried out during the survey, however the workers and sardars were interviewed on the issue of turfing and grassing productivity based on their previous experience. Details of their response are included in the HCL report and although the information from the workers and the sardars is different it appears that a figure in the order of 20M² per day for either turfing or grass planting (with a haul distance of up to 100M) is indicated.

This information compares with the following information on turfing from other projects:

Project	Estimated Cost /M²	Estimated cost in wheat kg
TIDP II (Tangail)	8.00 Taka /M ²	
CARE IFFD		0.3kg/M ²
RDP 16	2.25 Taka/M ²	
GOB (MOR)		0.33kg/M ²
PWD (Schedule of rates 1992) (for all districts)	3.00 Taka/M ²	
LGED Standard spec. Item 2.3.11 (Manikjong 1994/95)	7.00 Taka/M ²	

Clearly there is a wide disparity between the results in the above table and an uncertain basis from which to recommend a daily productivity rate. Never the less it is important to take into account the estimates of the workers interviewed and if their estimate of 20 M² is accurate then on the basis of a daily ‘wage’ of 40 Taka a productivity of 2 Taka /M² can be assumed and is in line with the RDP 16 project in LGED.

4.2 Recommendation

The mission recommends a daily turfing and grass planting target of 20M² per worker and this should be not attached to any lead of lift adjustment. The mission also recommends that the turfing and grassing operations be undertaken as separate contracts where women workers are targeted for employment. These contracts should take place between July and October each year and could also be associated with road side tree planting work which again should target women workers who would eventually be able to benefit for the sale of the timber harvested. The mission also recommends that the specification for the carrying out of this work be in accordance with the standard specification of the respective technical ministry.

PRESENT ESTIMATING ARRANGEMENT FOR FAW WATER, ROAD AND FISHERIES PROJECTS.(KG/WHEAT)				
Description	Measure	BWDB	LGED	MOFL
Basic Earthworks. (30.5m lead-1.5mlift)	M3		1.42 ¹	
Ponds/tanks				1.98 ²
Canals				1.81
Embankments		1.42		1.65
Field channel		1.48		
Canals/Rivers		1.65		
Cross bundh (excavate and remve)		2.84		
Ring bundh construct.		1.42		
Additional leads (3m to 15m)	LM	0.15	0.15	
Additional lifts (0.3 to 1.0m)	LM	0.10	0.10	
Soil Condition extra	M3			
Hard/slushy/sand soil	M3	0.20 (<50%)	0.20 (<50%)	
De watering (bailing)	M3	0.20 (<30%)	0.20 (<30%)	
Setting out				
Nicking lines	1000m	9.20		
Profile sets	100m	1.40	1.87	
Coolie path	M3	0.20 (<10%)		
Clod breaking, spreading & compaction.				
Clayey soil	M3	0.46 ³	0.46	
Sandy clay		0.35 ⁴	0.35	
Sand		0.18 ⁵	0.18	
Leveling, cambering, turfing & grassing	M2 t/km	0.22/30. 1.50	0.30	0.30
Clearing (& benching)	M2	0.60		
Ploughing	M2	0.02		
Sardar		5%	5%	5% ⁶
Supervisor		1%	1%	1% ⁷
Notes: 1. For this item the MOR rate is 1.59. 2. Rate used for all WFP/NGO schemes. 3. 1.5 for IFDP (CARE)/and RDP 16 (DANIDA) use for all conditions. 4. 1.14 for IFDP (CARE). 5. 5 0.60 for IFDP (CARE). 6. Rate for NGO schemes and 0.082kg/cubic metre for MOF schemes. 7. Rate for NGO schemes and 0.016kg/cubic metre for MOF schemes				

Annex 9: Recommendations on payments for supervision and supervisory training

1.0 Supervisory payments

At the present time the PICs and the SICs are not officially recognized as being entitled to any payment for their supervisory and coordination efforts other than through the 5% payment for sardars and the 1% for supervisors. The survey has indicated that the sardars and supervisors do not necessarily receive the specified payment and very few records are kept of payment transactions.

The present ratio of one working sardar to 15 to 20 workers is considered satisfactory as is the ratio of 1 supervisor to 5 to 7 sardar. The present difficulty is however, and this is partly because of the short working season, that the supervisors do not appear to be adequately prepared for their duties and are not trained in setting out and measurement of work; an essential skill for their role and responsibility on all labour intensive work sites. In fact it can be generally stated that, internationally, successful labour intensive and the labour based projects recognize the key role of supervisors by providing mandatory training to them before they can be engaged on a work site.

Recognizing that the PIC/SIC and the LCS do also have a key role to play in the scheme management, under the supervision of the GOB engineer, the mission is recommending that they be compensated for their work by way of a 1% of the scheme payment conditional on certain specified quality standards having been met on the scheme. This is in addition to the current 5% and 1% respectively for sardars and supervisors which should remain as it is but with a training element introduced to strengthen the quality of their work.

1.1 Role and responsibilities of PIC/SIC/LCSs

In consideration of the additional payment, the services provided by the PICs and SICs and LCSs should form an agreement along the lines already provided for in the WFP schemes and require the PIC/SIC/LCS:

- To advertise and promote the project;
- To organize and engage suitably qualified supervisors and sardars so that the work is properly set out to the design requirements;
- To plan and organize the work such that the project is able to be completed on time, within budget and to the necessary quality standards. Payment of the 1% fee is contingent on the achievement of the necessary quality of work particularly in respect of compaction standards;
- To regularly monitor the output of the individual sardar work units;
- To ensure that all workers are receiving their full wage entitlement;
- To have in place and to agree to undertake arrangements for the maintenance of the works which satisfy the GOB engineer;
- To maintain proper records of agreements with sardars and supervisors; and
- To ensure that dewatering of the site is carried out as required to ensure good quality work and good working conditions on site.

1.2 Training needs for supervisory personnel

As a means of improving the quality of the work and in ensuring better scheme monitoring, the sardars and more especially the supervisors should be able to set out and measure up a day or weeks work for their gangs. This is therefore a matter of carefully screening the candidates for these posts and for WFP in association with its technical implementing partners to arrange each year for rapid one day training on site of the supervisory staff.

Local or international NGOs should be well able to conduct rapid on site training of representatives of PICs, supervisors and sadars for the WFP supported schemes. CARE and the ILO would be able to provide a wide range of training materials for such training and if requested arrange for a training of trainers course to get the programme under way.

In the 1996/97 programme involving 1761 schemes and 3300 PIC members, there are already within the technical ministries 409 trainers. The challenge for 1997/98 will be to prioritize attention on a likely 3500 supervisors and 18,000 sardars who will be responsible for the day to day activities of some 450,000 workers involved in FAWs.

1.3 Recommended training

The training envisaged would cover the following topics:

- basic measurement (simple maths);
- setting out (borrow pits, embankments , side slopes, embankment profiles, road camber and longitudinal grades);
- achieving clod breaking and compaction standards in practice;
- general gang balancing for efficient productivity(diggers, carriers clod breakers and compactors);
- recording output and payment entitlements of the workers;
- general site safety and good work practices; and
- dewatering, “waterproofing” of site operations and maintenance.

Annex 10: Costing example using recommended work norms and wage rates

This costing example is based on an actual estimate for the LGED Scheme; Reconstruction of Road from Solua GC to Kayemkhola GC in Thana; Chowgacha & Jhikargachaand in the District of Jessore. The soil type on the estimate is described as sandy silt & clayey silt.

This is a new road connecting growth centres, involving 9.6km length and 7.32m width. The original estimate is set out below in the shaded portion but there is an extra over rate for compaction of 1.15 kg/M³

The extra over rate brings the total original rate up to the 1.5 level now being used in a number of LGED projects and realistically recognizes the need to estimate for a much higher figure than is currently provided for in the WFP/GOB estimate schedules.

From the table it is quite easy to cross reference the various items and to see how the current activity items translate into the proposed new schedule.

It will be noticed that the ‘allied items’ equate reasonably well. It is assumed that the extra lifts and leads are not in excess of 50m lead and 3m lift and hence no adjustment is needed in the new rates column. Bailing or de watering is transferred to the PIC ‘account’ and here it is intended that the engineer would authorize its use on an as needed basis ensuring that the workers received the day works rate of Taka 45 for the work involved. (It is not usually appropriate to place a productivity figure on this activity.)

It will also be noted that certain other items are not now costed separately in the new schedule. These include clearing and benching now part of the methodology for basic earthworks and not a separate item as such. Profiling and setting out are seen to be part of the responsibility of the supervisor under the guidance of the GOB engineer.

The productivity rates used in this example are those observed as being achieved in the field survey with the exception of turfing which converts to a rate of 2.5M³ if the turf is an assumed thickness of 10cm.

SL No	Item	Rate in kg	Qty in M ³	Tons Wheat	Taka value at T7/kg	Worke r days	Day rate prod-uctivity	Taka value. WDXT45
1A	Earthworks at 30mlead & 1.52lift	1.42	56081.181	79.635	557445	9814 (39256.83 5M ³)	4.0M ³	441639
1B	Compact. and clod breaking	0.35 clay/sandy silt	56081.181	19.628	137396	12462 (for total earth works)	4.5M ³	560790
1B	As above with extra over	1.15 rate	56081.181	64.493	451453			
2B	Extra leads of 3m to 15M	0.15	36079.708	5.411	37877			
3B	Extra lifts of 0.3m to 1.0m	0.10	60523.418	6.052	42364			
4B	Clearing and benching	0.15	8266.49	1.239	8673			
5B	Extra for hard and slushy or sandy soil	0.20	16824.346	3.364	23548	5608	3.0M ³	252365
6B	Bailing out	0.20	12698.788	2.539	17773			
7B	Profiles	1.89/ set	159 sets	0.297				
8B	Levelling, dressing, turfing	0.30/ M ²	46483.47	13.945	97615	1859	25M ²	83655
Sub total.				196.60	1376200	29743		1338435
1c	Sadar	5%		9.83	68810	29743	5%	66921
2	Supervisor	1%		1.97	13790	29743	1%	13384
(3)	PIC/SIC	1%					1%	13384
(3)	dewatering (if applicable)	1%					1%	13384
Sub total				11.90	82600			107073
Grand total	(food in tonnes)			208.50				
	(value in taka at T7/kg)				1458800			1445508

Annex 11: ILO/WFP understanding concerning payment of wages in kind

Since about 1963, the ILO and WFP have had an agreement⁴² and arrangement⁴³ aimed as seeking the observance of ILO Conventions relevant to WFP activities in projects carried out under the programme, whether or not the country concerned had ratified the Conventions in question. The main ILO provisions relating to wage payments in kind are found in the Protection of Wages Convention, 1949 (No. 95). The Convention is not ratified by Bangladesh. Under the ILO/WFP agreement, in “WFP projects involving the employment of wage labour, the workers should receive, in addition to the food supplied, a cash payment of not less than 50 per cent of the wage prevailing in the locality for the kind of work to be done.” Several fine points of the agreement clarified through the ILO/WFP cooperation, are of relevance here.

First, is the permissibility of payment of the wage wholly in food. This would be allowable if the employment created under the RDP was not wage-labour, i.e. the persons were working for their own immediate benefit. Without elaborating the point (please refer to the documents cited in footnote 1 below), earthworkers working in the road and water sectors are clearly wage labourers, and those in the fisheries sector, though possibly work on their own ponds are, more likely than not, working on ponds in the ownership of others. As for forestry schemes, the arrangement of the some schemes -- perhaps the majority -- and the ownership of the trees is more in the nature of work for the immediate benefit of the persons involved. The participation, however, in many schemes of the owners of the land in the receipt of revenues derived from the work may justify classification of this work as wage-labour and subject to the ILO/WFP agreement. This point is, however, besides the point as the decision has been made administratively that all persons will participate in the 30% cash, 70% food arrangement. Comments in the main report therefore treat all labourers in the RDP as wage-labourers.

Second, is determination of the level of wage upon which the proportions of cash and food are to be based. The ILO has pointed out that “the wage actually paid must be at least equal to the minimum wage paid in the region for the same work or for work of the same kind, or equivalent to the minimum wage fixed by law, by an administrative or judicial decision or by a collective agreement, where such a wage exists.” As discussed in more detail in the main portion of the report, there are a range of wages in the sectors and geographic areas where FAW operate. None appear to be legally binding, but rather rates paid in the region for work of the same kind done by the labourers.

⁴² See, Report of the ILO Director General to the Fourth Session of the Inter-Government Committee of the ILO concerning the application of international labour standards to WFP activities (WM/IGC:4/10), and described in (1) an undated document entitled “International labour standards and WFP projects: the distinction between wage-labour schemes and self-help projects” note by the ILO, presented by K.T. Samson; (2) a document entitled “Distinction between self-help and wage-labour projects”, WFP/ILO (NORMES) Meeting, Rome - 17.2.1992, Doc. 1; and (3) a document entitled “Payment of Wages”, WFP/ILO (NORMES) Meeting, Rome - 17.2.1992, Doc. 2. The agreement and arrangement was reaffirmed between the Organizations’ secretariat in February, 1992.

⁴³ Under the arrangement, the WFP systematically forwards to the ILO project documents for review and comment.

We note that the Bangladesh Cabinet has, during the mission, approved ratification of the Equal Remuneration Convention, 1957 (No. 100). The Convention requires the ratifying State to declare a policy of equal remuneration for men and women for work of equal value. It requires also that Government take action in pursuance of this policy, with the aim of achieving equal pay for work of equal value throughout the economy. The issues related to women's earnings discussed in this report are classic of the issues meant to be addressed by the Convention. That is, the situation where women are performing work activities different than men and are paid less than men, despite the fact that the women's activities are of *equal value* to those performed by men. The equality of the value of the women's work in this case, i.e. carrying of earth, can be clearly imagined if one considers an earthwork project without people carrying earth. The carrying work is equal in value to the digging work as one cannot go on without the other. And for this, women should be paid as men. We believe the proposals made in this report are in line with the policy endorsed by the GOB with its approval of the Convention's ratification.

**Annex 12: Submission of Director (FFW),
Directorate of Relief and Rehabilitation**

Annex 13: Logical framework of implementation