International Labour Organization

Employment-Intensive Public Works (EIPWs) to Create Employment

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Table of Contents

List of Acronyms and Abbreviations

ADB	Asian Development Bank
ADP	Annual Development Programme
AJK	Azad Jammu and Kashmir
BOQ	Bill of Quantities
BTAP	Billion Trees Afforestation Project
C&W	Communication and Works
COVID-19	Corona Virus Disease 2019
DFID	Department for International Development
DST	Double Surface Treatment
EIIP	Employment-Intensive Investment Programmes
EIPW	Employment-Intensive Public Works
FAO	Food and Agriculture Organization
FATA	Federally Administered Tribal Areas
FMD	Foot and Mouth Disease
FY	Fiscal Year
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
ILO	International Labour Organization
KG	Kilogram
KP	Khyber Pakhtunkhwa
M&R	Maintenance and Repair Work
NCHD	National Commission for Human Development
NDMA	National Disaster Management Authority
NDRMF	National Disaster Risk Management Fund
NGO	Non-governmental Organizations
NHSRC	National Health Services, Regulation and Coordination
PBS	Pakistan Bureau of Statistics
PC	Planning Commission
PDMA	Provincial Disaster Management Authority
PILER	Pakistan Institute of Labour Education and Research
PKR	Pakistani Rupee
PPP	Public Private Partnership
PSDP	Public Sector Development Programme
PTI	Pakistan Tehreek Insaaf
PWPs	Public Works Programmes
SMEs	Small and medium-sized enterprises
TB	Tuberculosis
TST	Triple Surface Treatment
UK	United Kingdom
UN	United Nations
UNV	UN Volunteers
UNICEF	United Nations International Children's Fund
WHO	World Health Organisation

Executive Summary

The current pandemic - COVID-19, is an ongoing health emergency that has affected millions of people across the world adversely - socially and economically. The impact of this outbreak on the global workforce has been most devastating. Pakistan, like many other countries, also faced the economic brunt of COVID-19, as economic output declined resulting in job losses, lower incomes and increased poverty.

The total labour force of Pakistan is comprised of around 65.5 million workers, out of which more than 40% are categorized as vulnerable. These mostly include the urban daily wage earners and temporary migrant workers, let alone the informal sector, who require immediate government attention for the provision of either financial assistance or short-term employment. Like many other countries, the government of Pakistan also announced financial support measures to limit the immediate economic fallout. However, with limited fiscal space, the government of Pakistan it is suggested to put into action employment-intensive public works programmes (EIPWs) in various sectors alongside to address current unemployment and underemployment in the country but also to provide enough employment opportunities that can absorb around 4 million people entering the labour force every year.

Employment-intensive approaches, aimed at providing short- and medium-term job opportunities to unskilled and low-educated workers, are termed as “labour-based, equipment supported technologies” and they deploy an appropriate mix of machines, material, and labour that maximise job creation while still fulfilling time, cost and quality requirements in local infrastructure works. More than 70 countries across the globe including India, Nepal and Bangladesh have successfully executed EIPWs to address chronic unemployment and underemployment, as well as in response to sudden economic shocks caused by disaster and crisis like events such as war, floods, earthquakes, pandemics, etc.

EIPWs have an immense potential to: a) alleviate poverty and provide social protection through enhancing short and medium-term employment outcomes; b) improve local public services and infrastructure that support local economies; and c) complement government stimulus measures aimed at improving job market.

Pakistan can roll out EIPWs immediately for developing new and maintaining existing public infrastructure including *inter alia*: a) repair of schools and hospital buildings and provision of missing facilities; b) construction, repair and maintenance of roads; c) repair, maintenance and upgradation of irrigation channels and their desilting; d) rehabilitation of the Karez water system in Balochistan; e) street pavement and drainage systems in villages, peri-urban areas and low-income settlements; and f) housing construction. Such public works can quickly generate employment for unskilled workers/vulnerable workforce segments that have been particularly impacted by the economic slowdown caused by the COVID-19 pandemic. In addition, such upgrading of public infrastructure improves livelihoods of local communities and enhances their well-being.

Moreover, EIPWs have an immense potential to create employment opportunities in other sectors including: a) land and water resource management; b) soil and water conservation; c) disaster prevention and mitigation; d) forestry - environment rehabilitation through afforestation and reforestation; e) climate change adaptation works; f) waste management; and h) care economy.

Employment-intensive approaches are time-tested and proven concepts across the world but with some limiting factors that need careful consideration when assessing its feasibility for certain types of works: a) availability of labour with required skills sets; b) cost-effectiveness of using labour for particular work activities; c) technical feasibility to meet quality standards/technical parameters of the work; and d) need for training of implementing agencies in order to effectively execute these approaches. Based on past experience, it is remains evident that employment-intensive approaches can be integrated in many existing infrastructure works programmes without compromising on cost-effectiveness, quality or time. Moreover, the introduction of these approaches into existing programmes offers the potential to increase job creation without incurring any additional costs.

Recommendations

Considering the local context, the following are recommended.

a. The federal and provincial governments should initiate new EIPWs in all sectors, indicated in the preceding sections. Such EIPWs should be based on established work methods/tools developed by ILO and other organizations. It is important to concentrate on public works/work packages that are labour-intensive by default or can serve as a competitive/cost-effective substitute for equipment-based work methods.
b. Rather than using EIPWs as one-off interventions for economic recovery in response to COVID-19, EIPWs should be mainstreamed in all economic development programmes and be used as a complementary course(s) together with other stimulus measures to create jobs. It would help create additional jobs with the same amount of investments.
c. The government(s) should use an employment/livelihood lens to prioritize development programmes under PSDP/ADPs, so as to create more job opportunities and to promote livelihood outcomes for local communities. For this, it would be useful to add special entries in PC-1 form(s)/template.
d. It is recommended that appropriate clauses be included in government work contracts to bind contractors to use employment-intensive approaches for those work activities where labour is more cost-effective and can meet technical specifications. Usually, contractors prefer using equipment-based approaches to avoid hassles of labour hiring and its management.
e. Instead of large-scale projects with multi-billion budgets, aimed at the construction of mega structures, the government(s) should give more emphasis to developing the smaller scale local infrastructure, which are more conducive to employment-intensive work methods and allow for the use of locally available skills, materials and labour. Such infrastructure play an important role in providing basic services in rural areas and low-income settlements. For greater effectiveness, impact and sustainability, these can be designed and rolled out with active participation of local communities.

f. Rethink the technology shift for construction of local roads with lower traffic volumes and reduced design speeds from ”Aggregate Base Course” and “Asphalt Wearing Course” technology, to the traditional “Water-Bound Macadam Base Course“ and “Triple Surface Treatment – TST” technology, which is relatively more labour-intensive.
g. For rolling out EIPWs, the focus should be on rural areas of Baluchistan, interior Sindh, South Punjab, and KP (FATA), where poverty rates are higher as compared to other areas of Pakistan.
h. Mainstream decent work, gender, diversity and inclusion in all development programmes including EIPWs through appropriate policies and laws.

Employment-Intensive Public Works (EIPWs) to Create Employment

1. Loss of Employment and EIPWs Approach

Pakistan, like many other countries, has faced the economic brunt of COVID-19, as economic output declined resulting in job losses, lower incomes and increased poverty. As an immediate response to COVID-19, the government announced a stimulus package to mitigate the economic fallout of the pandemic. However, the government has very limited fiscal space, which it can use to render income support to the most vulnerable segments of the labour market. On one hand, it is challenged with the provision of health services and social protection while on the other it faces the challenge of stimulating economic recovery and alleviating the increasing surge of unemployment and poverty.

However, rolling out employment-intensive public works programmes (EIPWs) in various sectors, including but not limited to roads, buildings, irrigation, forestry, land management and climate change adaptation, is a time-tested and proven concept across the world to create millions of short- and medium-term employment to support vulnerable segments of the society. EIPWs can complement with other stimulus measures to promote employment opportunities, especially in rural areas and particularly in districts facing chronic unemployment and/or underemployment.

Several countries across the world have recently experienced a second wave of COVID-19, and therefore adverse effects of the pandemic are expected to continue into 2021. As a result, the labour market will continue to face escalating trends of unemployment/underemployment and in turn worsening inequality, rendering the poor more vulnerable. In the given situation, a holistic and comprehensive planning to initiate EIPWs aimed at vulnerable segments of the society can help the government to cope with this unexpected crisis situation.

1.1 Most Affected Business Sectors

Like other countries, the COVID-19 pandemic has left a significant negative impact on Pakistan’s economy, export and labour market due to: a) supply shock - disruption of inputs supply due to breakdowns in local and global value chains; b) lockdown effects - government’s mobility restrictions and measures to close non-essential businesses; and c) demand shock - economic slowdown decreasing local and export sales. In Pakistan, the most affected sectors due to

COVID-19 are manufacturing[1] and services, which contribute over 80% to the country's GDP and 63% to total employment. Trade (retail, wholesale, and import-export), construction, transport, tourism and hospitality sectors have been worst hit. In 2020, Pakistan witnessed a negative 0.38% growth in GDP on the basis of 2.67, -2.64, and -0.59 percent growth in agriculture, industrial and services sectors respectively[2]. Pakistan is lucky that its agriculture sector, which provides employment to around 37% workforce, continued its production without any major disruption, except some minor issues of transportation of agriculture produce.

1.2 Most Vulnerable/Affected Workers

The total labour force of Pakistan is comprised of around 65.5 million[3] workers, out of which over 40% are categorized as vulnerable. The workers who were already struggling to make ends meet prior to COVID-19 have been worse hit due to the slow-down of economic activities. Given an increase in unemployment/underemployment due to this situation, a surge in people living below the poverty line is becoming evident.

The most vulnerable segments requiring government attention for the provision of either financial assistance or short-term employment, are given below:

- Urban daily wage earners mostly rely on daily wages for survival;
- Temporary migrant workers from rural to urban areas are usually unskilled and lowly educated. They are mostly engaged in the construction sector, retail and wholesale, transport, storage and small-scale hotels and restaurants. The lockdown situation in the country put the employment of millions of such workers at risk;
- Most urban migrant workers returned to their home villages due to loss of employment and income. As a result, workers and their families in rural areas which are dependent on remittances have been adversely affected;
- Informal sector[4] workers account for 75% of the workforce[5]. Fortunately, around 40% of the informal workers work in the agriculture sector, which experienced little or no impact of COVID-19 and has shown a positive growth in FY2020. The remaining 60% of this workforce is employed in services, manufacturing and other sectors, which have been worst hit.
- The Asian Development Bank (ADB)[6] estimated that during the containment period, young Pakistani are more likely to lose full-time-equivalent jobs, between 1.5 million (short containment scenario) and 2.26 million (long containment scenario). This is because of higher concentration of these in the sectors hit hard and also because of the lower labour productivity in Pakistan in these very same sectors. As a result, the country's unemployment rate is

[1] Manufacturing of non-essential items was greatly affected
[2] Pakistan Economic Survey 2020
[3] Pakistan Labour Force Survey 2017-18
[4] Pakistan has a large informal and undocumented sector with millions of employees, who are unregistered, not entitled to social security benefits.
[5] Pakistan Institute of Labour Education and & Research (PILER)
[6] Tackling the COVID-19 youth employment crisis in Asia and the Pacific Co-publication of the Asian Development Bank and the International Labour Organization

expected to jump from 8.9% in 2019 to 17.3% (short containment) up to 21.5% (long containment - six months long).

- Employed workers on a contract/piece-rate basis in SMEs are affected due to decreases in sale/export. In the textile readymade garment/leather garment sector – one of the largest sectors of Pakistan, workers mostly women are employed on contract/piece-rate basis. Due to a decline in export[7], such workers are facing unemployment or underemployment.

2. Government Response for Revival of Employment – A Critical Analysis

The federal government has taken several fiscal, monetary and micro-financial measures, aligned with country-specific circumstances to limit the socio-economic impact of the COVID-19 crisis. Most of the measures are aimed at accelerating overall economic activities such as decreasing the interest rate/policy rate by a cumulative 625 basis points to 7.0 percent till to-date, trying to reduce inflation through tariff and custom duty reduction on food items, reduction in regulated fuel prices, and support for health and food supplies.

The federal and provincial governments also took some specific measures to avoid the adverse impact of COVID-19 on the labour market and to provide relief to workers. The details are given in **Annexure 1.**

If we closely analyze the federal and provincial governments interventions with an employment lens, we can conclude that all these initiatives were aimed at: a) providing temporary cash/food support to ultra-poor families and daily wage workers whose livelihood have been affected by the lockdown and economic slowdown; b) giving tax and non-tax incentives (stimulus) to businesses to improve their financial liquidity so that they can revive their regular business activity and can retain their existing workers (job retention); and c) accelerate construction activities in the country to generate new employment opportunities for low-skilled daily wagers.

The biggest challenge being faced is the control of unemployment, caused by the slowdown of economic activities along with a reduction in national and international sales. Migrant workers returning from the Middle East and other countries are further aggravating the situation.

With the exception of government incentives directed towards boosting the housing and construction sector for the private sector, and rolling out some additional infrastructure related projects in annual PSDP/ADPs, a comprehensive approach of initiating large scale public works programmes (PWPs) aimed at new employment creation seems to be missing altogether in the Government's strategy.

Even infrastructure/construction/housing related projects have been designed with the main objective of creating economic activity through an increase in production of the associated backward and forward integrated sectors (construction material/construction inputs) and not for the creation of immediate direct employment at a large scale. For example, Punjab's ADP has

[7] Pakistan Bureau of Statistics (PBS) disclosed that Pakistan's textile and clothing exports declined by over 15% year-on-year basis in August 2020.

budgeted PKR 15 billion for the Punjab Economic Stimulus Programme (Rural Accessibility Programme) to be executed by the Communication and Works Department, but these few kilometers long small 12 feet wide rural access roads/farm-to-market roads will be constructed in rural areas using "Asphalt Wearing Course" rather than traditional labour-intensive "Triple Surface Treatment – TST" technology, which have been used by the department in the past for similar works.

However, it would be pertinent to mention a PWP of the KP provincial government, which has advertised the hiring of 20,000 daily wagers for tree-plantation at various places in the province. This programme will provide employment opportunities to 20,000 unskilled and illiterate men and women during the tree plantation season spanning around 40 days.

The forgoing analysis indicates that the initiatives so far by the federal and provincial governments and upcoming development projects will only partially solve the issue of unemployment/ underemployment. The situation necessitates targeted public works programmes, based on employment-intensive and local-material based technologies with active participation of local communities.

The importance of such approaches increases several times in face of the burgeoning population of youth. The economy is not growing at the pace which is enough to generate sufficient numbers of employment opportunities to absorb around 4 million[8] people entering the labour force every year. The economic downturn caused by COVID-19 has further aggravated the situation, which argues in favour of employment-intensive investment approaches in all possible business sectors.

3. Employment-Intensive Public Works (EIPWs)

3.1 Employment-Intensive Approaches

Employment-intensive approaches is the term used by the International Labour Organization (ILO) for the deployment of an appropriate mix of machines, material, and labour that maximise job creation while still fulfilling time, cost and quality requirements in local infrastructure works. Contrary to common misconception, ILO does not only emphasize on labour but recognise the need for equipment and materials in order to reach established standards of quality and costs. Employment-intensive approaches are therefore termed as "labour-based, equipment supported technologies".

Such proven approaches are aimed at socio-economic development through use of local labour and materials to the maximum extent possible. It creates employment opportunities, saves foreign exchange and develops/supports local industries. Likewise, the World Bank Community Infrastructure Upgrading Programme and the UN-Habitat Participatory Slum Upgrading Programme have the same spirit.

[8] COVID-19 Responsive Annual Plan 2020-21 Planning Commission

Employment-intensive approaches is just an added dimension to public works. Using these approaches, employment-intensive public works (EIPWs)[9] can be designed in Pakistan, which link public works programmes with employment creation to address the chronic unemployment or underemployment in target areas and to regulate the job market in times of economic downturn.

Box 1

Employment-Intensive Public Works (EIPWs)

Rwanda, Nepal, Bangladesh and India used EIPWs extensively as a conduit to provide short-term employment to alleviate poverty and to address unemployment during the slack agricultural season. In the last few decades, there is a long list of countries across the world, which launched government-sponsored interventions of EIPWs, aimed at generating employment for vulnerable households during the economic crisis.

The ILO has successfully executed public and donor funded EIPWs in over 70 low- and middle-income countries, in response to both chronic unemployment and underemployment, as well as sudden economic shocks caused by disaster and crisis like events such as war, floods, earthquakes, pandemics, etc. EIPWs can be financed by the federal government, provincial governments, donor agencies or through on-going development programmes - and implemented with the involvement of the private sector and local communities.

3.2 Objectives and Rationale of EIPWs

Lower-middle and low-income countries have used EIPWS as a safety net instrument to create jobs in order to mitigate the adverse effects of natural disasters, macro-economic crisis, economic stabilization reforms causing sharp rise in unemployment/poverty, or chronic unemployment/underemployment. Usually the remuneration of EIPWs is given as a wage (cash for work). In the past, many post-disaster projects also provided remuneration in-kind (food-for-work).

COVID-19 is a covariate shock similar to natural disasters but its scale and scope is enormous, which requires rolling out country wide large-scale interventions. Developed countries have introduced schemes aimed at subsidizing wage payments for the employees and improving their job retention. However, developing countries like Pakistan can't match the level of financing. Hence, employment-intensive approach is a more appropriate option, because value of money[10] is high along with significant socio-

Box 2

Initiatives Taken by Germany & Other Countries

Germany initiated a Short-Term Work - STW (*Kurzarbeit*) scheme to reduce unemployment in the post-COVID-19 recession, which it had successfully tested during the previous global financial crisis in 2009. The short-term key benefit of STW is to reduce the rate of unemployment during an economic setback, and medium-term gains is in form of maintaining viable job matches. The Government of Germany has subsidized wage payments for employees who faced working hours cut by companies during the COVID-19 crisis. Switzerland, Austria, and Italy have similar schemes, while countries such as Denmark and UK have implemented job retention schemes. But such schemes have a tremendous financial cost to the government, almost unbearable for a country like Pakistan.

[9] Employment-Intensive Investment programme (EIIP) term is also used for such types of works
[10] The number of workers get employment with a given amount

economic returns/benefits of the constructed valuable assets, rendering long lasting benefits in the future. If applied in already existing public works programmes, there is limited additional costs to the government - mainly related to introduction of technology and training.

With this consideration in mind, it would be appropriate to initiate targeted EIPWs with a two-pronged strategy:

a. Generate employment for low-skilled workers/vulnerable segment who have been particularly impacted by the economic slowdown during the COVID-19 pandemic;

b. Develop new and maintain existing public infrastructure for improving the livelihoods of local communities or enhancing their well-being.

3.3 Benefits of Employment-Intensive Public Works

Labour can compete with machines for certain work activities for given quality and costs. The extent of which labour can replace machines depends on the type of infrastructure and the required work activities. The optimal solution is often a combination of labour and machines. There is a long list of work activities, which can be performed by use of labour only and for which relying predominantly on the inputs of manual labour is far more cost effective. Constructing earthen/shingle roads in hilly areas or their maintenance is often more cost effective using local labour and local resources viz-a-viz machine-intensive work methods. In certain cases, machines are not even technically feasible to undertake certain types of activities. Cleaning and rehabilitation of the Karez irrigation system, widely used in Balochistan, or construction, cleaning and repair of water channels in hilly areas are almost impossible by use of machines.

Likewise, EIPW can be an effective instrument of social protection programmes to safeguard poor and vulnerable households. Provision of employment is a better option in comparison with dishing out cash or food support. Jobs help workers to become active and productive members of society rather than promoting dependency, which leads to creation of other ills in the society. In addition, the works result in productive infrastructure assets essential for improving livelihoods in local communities.

If properly applied, EIPWs have immense potential to accrue benefits including: a) poverty alleviation through enhancing short and medium-term employment outcomes; b) creation of secondary (indirect) and induced jobs by use of local resources to the maximum extent; c) transfer of skills to the local workforce which is essential for maintaining civil works in the future; and d) improved local public services and infrastructure that support local economies.

3.3.1 EIPWs Complementary Role with Other Job Market Stimulus Measures

It is common practice across the world that governments roll out stimulus packages for the job market to improve self- and wage-employment opportunities in both public and private sector. In Pakistan, public sector is already financially overburdened by the payroll of government

employees and pensions for retired employees. Therefore, the government can't afford to hire new low scale employees at a large scale.

The private sector has already been striving for improvement of labour productivity and in post COVID-19 scenario, they are facing enormous challenges of retaining even their current employees. Thus, to provide jobs, Pakistan's government is relying on their Kamyab Jawan – Youth Entrepreneurship Scheme aimed at self-employment. However, it is evaluated that the skilled and educated segment of labour market would be the main beneficiaries of this scheme. In the given situation, government may initiate EIPWs for unskilled and low-educated workers to provide short and medium-term job opportunities.

Box 3

Rural Maintenance Programme (Bangladesh) - EIPWs Serve as Social Safety Net Programme

The scale and scope of construction and maintenance of earthen rural roads can be gauged by the fact that Rural Maintenance Program (Bangladesh) provided year-round employment to around 42,000 destitute rural women for a period up to four years. They were assigned the responsibility of maintaining 84,000 kilometers of earthen rural roads around their villages across the country.

3.4 Design Consideration of EIPWs

There are several cross-country variations in the design, execution modalities and implementation models of EIPWs and every country has designed its indigenous version. Pakistan also has the liberty to figure out a model in line with its peculiar socio-cultural context.

To introduce its approaches, EIPW includes short training components, with training duration varying from a few days to a few weeks to impart soft and hard skills to workers, enabling them to carry out their jobs effectively. Such training also enhances workers' capacity to transition into a regular wage - or self - employment, backed by micro-credit, if required in the future.

3.5 Scope and Potential for Employment-Intensive Public Works

Employment-intensive interventions can be grouped into two following major categories:

a. Humanitarian-led employment provision as emergency relief in post-disaster/post-crisis: Such short-lived programmes/projects are aimed at providing cash to the temporary unemployed population of disaster-hit areas, usually for less than six months.

b. Development-led public works/infrastructure programmes/projects using employment-intensive approaches: The programmes/projects are undertaken to develop, rebuild or maintain physical assets as part of the socio-economic development strategy of the country/region. Such interventions address the chronic unemployment or underemployment in targeted areas, caused by multiple factors.

However, we should keep in mind that each of the abovementioned interventions respond to a different segment of the labour market.

In Pakistan, employment-intensive interventions can further be categorized into the following two, with respect to nature of work:

a. Maintenance and Repair Work (M&R) – of the existing civil structures (building, roads, canals, bridges, water schemes, drainage, sewerage systems, etc.). In Pakistan, every year billions of PKR are budgeted for periodic and routine maintenance and repair works.

b. New schemes/new works – every year governments (federal and provincial) allocate huge amounts for new civil infrastructure and the social sector under their PDSP/ADP.

Pakistan has a significant opportunity to create unskilled and low-skilled jobs through infrastructure works. It can be found from the experience of various countries that employment-intensive technologies/approaches have a good fit and are well-aligned with the construction, rehabilitation and maintenance of secondary and tertiary roads, construction of small bridges, culverts, and other local infrastructures. In the last two decades, a range of approaches have evolved to embrace a diverse range of sectors including environmental rehabilitation through afforestation/reforestation, land and water resource management, irrigation and water supply, care economy, disaster mitigation, flood protection and climate change adaptation works.

Box 4

The Expanded Public Works Programme (EPWP) of South Africa

The EPWP is a nationwide Government programme aimed at generating additional employment opportunities through the use of labour-intensive work methods and skills training, thereby contributing towards national poverty alleviation goals.

The programme covers four major sectors: (i) infrastructure sector - increasing the labour intensity of government-funded infrastructure works; (ii) environmental sector - creating jobs in public environmental programmes; (iii) social sector - creating additional employment in social programmes such as community based health and social welfare care and early childhood development, and (iv) economic sector, developing small businesses and cooperatives.

4. EIPWs with High Employment Potential in Pakistan – Traditional Sectors

There is a long list of infrastructure that are traditionally considered more suitable for rolling out EIPWs. However, the selection and priority of these should be based upon a set of well-chalked out eligibility criteria, which includes inter alia, scale of employment creation for unskilled/low skilled workers, potential impact of the proposed infrastructure on the livelihood opportunities/access to health and education facilities, and ease to construct/complete during the same timeframe during which the job market would benefit from stimulus measures.

The following sections pinpoint suitable interventions for rolling out EIPWs in traditional sectors, for different geographic regions of Pakistan.

4.1 Provision of Missing Facilities & Repair of Schools and Primary Health Facilities

Primary schools and primary health facilities (basic health units, rural health centers) are the most neglected public buildings in all four provinces due to shortages of maintenance and repair budgets. The following EIPWs are proposed to improve the situation in Sindh and Balochistan, where there is a relatively greater need:

a. Repair of classrooms of primary schools (flooring, wall plastering, paint, electric wiring, etc.);

b. Repair of toilets facilities in schools (Primary, Middle, and High Schools);

c. Construction of toilets in schools/additional toilets (where enrollment has increased);

d. Repair of wards/emergency rooms of primary health facilities (flooring, wall plastering, paint, electric wiring, etc.);

e. Repair of toilets in health facilities.

f. Provision/addition of hand washing facilities in schools.

Hand washing is one of the most effective tools to prevent transmission of not only COVID-19, but also typhoid, diarrhea, and cholera. Therefore, hand washing facilities are now more critical than ever. At present, in many schools, either wash hand basins (WHBs) are not available or just limited to one. These facilities need to be improved with the installation of new/additional WHBs.

4.2 Construction and Maintenance of Roads

In Pakistan, roads are constructed using a wide range of technologies, in accordance with the purpose of road and the type of traffic. In KP and Baluchistan, roads with unsealed pavement like earthen roads, and shingle roads (with gravel/aggregate) are common for low volume traffic. Village access roads in hilly as well as in plain areas of all provinces, are constructed mostly using double/triple surface treatment (DST/TST) as surface course. However, asphalt (as surface

Box 5

Roads Sector of Pakistan

Pakistan, with 263,775 kilometers of roads, ranks at 22nd position worldwide with respect to size of its road network. It has 13,000 kilometers of National Highways and Motorways, 93,000 km of provincial highways and the rest classified as district and rural/urban roads. Road transport is the backbone of Pakistan's transport system, accounting for over 92% of national passenger traffic and 96% of freight movement in 2010. In 1947, Pakistan inherited 50,367 kilometers of road network that has been continuously expanding. Despite the high reliance on road transport, Pakistan's current road density is just 0.33 km/sq.km, partly due to limited investments in the road network. Likewise, insufficient budget allocations represent the biggest challenge for maintaining the road system at an acceptable service level. (Source: i. Economic Survey of Pakistan 2019-2020 ii. Sector Assessment Summary (Road Transport) Asian Development Bank)

course) roads are replacing TST very rapidly, as intercity highways and even as village access roads.

In the road sector, EIPWs with following components are proposed:

a. Construction of new shingle roads in rural areas, including associated infrastructure such as culverts, bridges, retaining walls, etc., for low volume roads in hilly districts of KP (Chitral, Kohistan, Manshera, Shangla, Batgram, Buner, and Upper Dir, and Balochistan (Zhob, Musakhel, Kharan, Harni, and certain areas of Quetta).

b. Rehabilitation and repair of existing shingle roads in abovementioned districts.

c. Repair and patch work of inter-village and intercity roads in KP, Balochistan, Sindh and South Punjab. Such work includes patchwork, clearance of berms, repair of road shoulders and culverts, painting/erection of kilometer stones, boundary pillars and lane marking, and above all repair and opening up surface drains – side drains for rainwater, which are often chocked, and as a result rainwater and sewerage water remains accumulated on roads; thereby damaging them.

4.3 Irrigation Systems

4.3.1 Desilting[11] of Irrigation Channels

In Punjab and Sindh province, there is large-scale canal irrigation system which comprises of thousands of kilometers of water channels (canals, branch canals, distributaries and minors). Every year, the provincial irrigation departments undertake desilting of distributaries and minors at a large scale but due to limited maintenance and repair budgets, required work is partially completed. In the past, it was an entirely labour intensive activity but now-a-days, contractors mostly use excavators and dumper trucks even to desilt small minors (less than 8 feet wide). Although department guidelines do not allow use of machinery for desilting of small channels but due to ineffective monitoring, contractors continue to use machinery to save time despite higher incurred cost than use of labour.

The perennial canals are closed in the last week of December for one month when all desilting work has to be completed. Non-perennial canals are closed for six months, which gives the departments a cushion of six months for de-silting. However, these are usually desilted in March and April.

Desilting is a major activity which can create short-term employment for thousands of low-skilled labour in more than 50 districts of Pakistan, with employment opportunities mostly concentrated in Punjab, Sindh, and KP. The activity gives the aforementioned workers a great opportunity, in close vicinity to their homes, to increase their earnings especially during slack periods, when

[11] Desilting is such a serious issue that in the General Musharraf era (in early 2000s), the military took charge of complete desilting of all water channels and eliminated the backlog of previous years with the help of local farmers.

agriculture activities slowdown in most areas with the exception of sugarcane-intensive districts where labour-intensive harvesting reaches at peak in December-January.

4.3.2 Strengthening of Canal Banks and Erosion Protection of Canal Banks

The main and branch canals require frequent strengthening of their banks. Furthermore, side erosion of canal banks occurs due to: a) high water velocity at upstream and downstream sides of bridges (on canals); b) at natural curves/turns of canals; and c) close to rural settlements[12] where livestock frequently enter canals. Such side erosion is controlled by "*Bamboo Bushing*" – a local resource based, labour intensive work activity, used by the Irrigation Department.

All these works are carried out through maintenance and repair (M&R) budgets of provincial irrigation departments, but scarcity of funds does not allow the required level of strengthening at many places.

4.3.3 Rehabilitation of the Karez Water Supply System in Balochistan Province

Balochistan is an arid to semi-arid region with limited water resources, mostly dependent upon springs, streams, rivers and the Karez. Balochistan has the ancient Karez water system and about one-third of the 3,000 systems that were believed to be in place in 1970 are still functioning[13]. The districts of Pishin, Zhob, Musakhael, Mastung, Kalat, Qilla Abdullah, Panjgur, Kech and Naushkhi, have hundreds of Karez which need "maintenance and extension work"; comprised of cleaning of water channels and horizontal tunnels, and repair of water channels and vertical shafts. In addition, irrigation pond/water storage tanks, washing pads (for women), and animal trough pools are optional structures/elements which can be included in such schemes. Such maintenance and cleaning work can increase on average 50 – 100 % of discharge of Karez from 1 - 2 to 1.5 - 3 cusecs. The maintenance work is labour-intensive, mostly using locally available materials.

Usually smallholder farmers are dependent upon the Karez system and such an intervention can increase their irrigation resources, thereby bringing more areas under cultivation as well as leading to an increase in productivity of current crops which in turn can improve the livelihoods of poor farmers.

4.3.4 Maintenance and Repair and Desilting of Small Irrigation Channels/Schemes

In the hilly areas of KP province such as Chitral, Swat, Battgram, Shangla, Buner and Dir, there are streams and numerous small water channels made of stone-rubble-masonry, which require repair and maintenance work as well as cleaning.

4.4 Street Pavement and Drainage Systems in Villages and Peri-Urban Areas

Thousands of villages and a great number of peri-urban areas are hugely deprived of basic civic amenities such as paved streets and drains. In addition, there are still considerable challenges in

[12] The rural population owns animals which frequently enter canal for drinking water.
[13] World Bank Report "Ashraf, Muhammad; ul Hasan, Faizan. 2020. Groundwater Management in Balochistan, Pakistan: A Case Study of Karez Rehabilitation. Water Knowledge Note World Bank, Washington, DC.

providing effective underground sewerage systems in villages and peri-urban areas. Equally, government departments still rely to a large extent on open drains. Street pavement using tuff tiles/bricks/stone and open drainage system can provide basic civic amenities to rural people and poor strata of the society.

4.5 Housing Construction

Housing construction has immense potential to create primary, secondary and tertiary jobs in construction as well as in the backward/forward integrated sectors. In the past, the private sector has been the major player in housing construction whereas government has had a negligible share, limited to construction of residences for government officials. Recently, the government has rolled out a mega project - Naya Pakistan Housing Scheme, to construct 5 million houses in five years (**Annexure 2** provides its details), to bridge the shortage of housing units in Pakistan and to boost economic activity in the country. Since the government has already allocated huge funding for this scheme, therefore, the Planning Commission should allocate available funds to other much-needed public works.

5. EIPWs with High Employment Potential in Pakistan – Emerging Sectors

While the focus of EIPWs has primarily been on the construction and repair/maintenance of roads and buildings, the use of employment-intensive approaches has evolved to embrace a diverse range of sectors. Some of them have been evaluated in an exploratory manner to assess the application of employment-intensive approaches to create short-term employment. The details are given in the subsequent sections.

5.1 Land and Water Resource Management

Land and water are the two most important interlinked natural resources. They play a key role in sustainable agriculture development and livelihoods in rural areas. In the Pakistani context, land and water resource management has the following dimensions:

a. Turning barren/uncultivable (culturable waste land) into cultivable lands with irrigation resources

b. Reducing soil erosion and increasing water storage (soil and water conservation)

c. Improving groundwater availability

d. Mitigating adverse effects of population explosion and urbanization on land and water resources

With respect to EIPWs, the first three dimensions are most relevant and need urgent attention and investment by the government. The fourth one entails long term planning and policy measures.

5.1.1 Turning Barren/Uncultivable (Culturable Waste Land) into Cultivable Lands

According to the Agriculture Statistics of Pakistan (2017-2018), culturable waste lands[14] to the tune of 8.29 million hectares is available in all four provinces. Punjab and Sindh have 1.47 and 1.60 million hectares respectively, whereas KP and Balochistan have 1.34 and 3.88 million hectares respectively of culturable waste land. Such a large scale of culturable waste land necessitates the development of an integrated land and water resource management model for specific areas that must take into account irrigation requirements, surface or ground water availability, irrigation water costs, total area to be cultivated, and suitable cropping patterns for the targeted area.

5.1.2 Mini and Micro Dams with Irrigation Schemes

Limited water resources, extreme weather conditions, inefficient and highly unequal use of land and water resources are some of the underlying factors of high poverty rates in Balochistan and KP provinces. Many parts of the provinces provide conducive agro-climatic conditions and the right topography for construction of mini and micro dams aimed at land and water resource management.

Water storage dams coupled with irrigation channels and lined water courses can help develop culturable waste land as well as *khushkaba (*localized runoff) land. Such mini and micro dams can be constructed using “random rubble masonry” or “plum concrete” technologies using local material and resources. These technologies are relatively more labour-intensive then in situ concrete technology[15].

Such interventions should be coupled with the activities of rehabilitation/restoration of land (command area). Removing wild bushes and shrubs, land leveling and improvement of on-farm water management are some other desired activities. The added advantage of dams would be (i) increased access of women to water for domestic use; b) improvement in drinking water availability for livestock; and (iii) ground water recharge. The Potohar region of Punjab; districts Pishin, Ziarat, Loralai, Zhob, Kohlu, Kech, Khuzdar, Lasbella, Mastung, and Killa Abdullah of Balochistan; and Southern part of district Peshawar, and Tribal Districts of KP could benefit from such interventions.

5.1.3 Improving Groundwater Availability – Delay-Action Dams

At present, due to indiscriminate extraction of water, the groundwater table in different regions of Pakistan has decreased to an alarming level. Groundwater extraction can be made sustainable by delay-action dams, which help recharging of groundwater aquifers. Construction of mini delay-

[14] Culturable Waste is that uncultivated area which is fit for cultivation but was not cropped for last five years or more for one reason or other, but usually due to water shortage. Such land may either wholly or partly be covered with shrubs which are not put to any use.

[15] In Potohar region of Punjab, small dams (which are relatively larger than mini and micro dams) are concrete dams or earthen dams (clay core/homogenous type).

action dams, using local resources can create short-term employment and improve the groundwater situation for irrigation and drinking water. Furthermore, these can be used for drinking purposes and small-scale irrigation.

The Federal Ministry of Water Resources has already conducted studies for the identification of suitable sites and construction work at some sites of KP and Balochistan is in progress. There is a great need of injecting more funds for such programmes on an urgent basis.

Mini and micro delay-action at the community level can also be constructed under “community physical infrastructure” interventions, managed by the Local Government Department or Provincial Agriculture Department or Rural Support Programmes.

5.2 Soil and Water Conservation

Soil and water conservation is generally interlinked because effective control of water can help control erosion and conserve the soil. In the last few years, due to climate change, increased precipitation but uneven distribution of rainfall (inter-temporal and spatial) during the monsoon and non-monsoon months has become very visible in Pakistan. Heavy amounts of rainfall in a short span of time or persistent rainfall for a prolonged time creates a flood like situation, which necessitates soil and water conservation measures to reduce soil erosion and precipitation lost as runoff. Especially in high elevation lands, loss of arable land due to terrain deformation by heavy rain water is common.

5.2.1 Construction of Gabion Retaining Walls

Due to the distinct topography in several districts of Balochistan such as Ziarat, Loralai, Musakhel, Zhob, Harani and Killa Abdullah, soil erosion is a major issue faced by farmers during intense rains. Likewise, many districts of KP including Chitral, Abbottabad, Mansehra, and Swat have similar problem. The rains often turn into flash floods and cause enormous land erosion. Construction of gabion or dry stone walls, based on local materials and labour can solve this problem.

Decrease in such erosion can help in reducing sediment loads in runoff water. As a result, sedimentation of rivers, siltation of reservoirs and irrigation channels is decreased, which in turn lowers the chance of flooding.

5.2.2 Rain Water Harvesting Reservoirs and Storage Ponds

Rain water harvesting is a low cost, simple technology for irrigation and drinking purposes. It can be used effectively in arid and semi-arid regions, especially in remote and scattered human settlements found in several areas of KP and Balochistan. Such structures can collect, store, and conserve water resources which otherwise may go lost through surface runoff and evaporation.

Such rain water harvesting structures require the development of land surface catchments with a conveyance system for transfer of rain water to the storage reservoirs. In addition, planting trees on the boundary of the pond to minimize evaporation losses are some other associated labour-intensive activities. The technology is labour-intensive and cost effective with limited operation and maintenance costs.

Such water storage has multiple benefits including: a) decrease in soil erosion due to reduction in surface-water/storm-water runoff; b) decrease in choking of storm drains and flooding of roads; c) recharge of groundwater table; and d) availability of water for drinking and irrigation.

Construction of rainwater harvesting ponds/reservoirs in Potohar region of Punjab; Tharparkar in Sindh, KP's districts of Tank, Karak, and Tribal Districts (FATA); and Balochistan's district of Noushki, Chagai, Awaran, Kharan, Loralai, Kech, Kalat, Pishin, Khuzdar, and Mastung; can significantly contribute to livelihoods and is likely to give good returns in terms of human development. It is pertinent to mention that rainwater harvesting has already been recommended in the most recent National Water Policy 2018.

5.3 Disaster Mitigation/Management

Disaster management aims to avoid or reduce the potential loss from disasters/hazards/untoward incidents. Usually, disaster management is comprised of making necessary arrangements for disaster risk reduction (making investment in prevention and preparedness to eliminate the causes/risks of disaster or to mitigate the potential adverse effects of disaster on infrastructure, people, and property); to respond during and after disaster; and to take necessary steps for rehabilitation and recovery after disaster. One of the major goals of disaster management is also to protect livelihood sources during the disaster and their recovery afterwards.

Box 6

Disaster Risk and Vulnerability in Pakistan

Pakistan is presently in danger of the following types of potential disasters.

Natural Disasters: Pakistan face natural geophysical (earthquakes, landslides), hydrological (floods, or breach of canals), climatological (extreme temperatures, heat weaves, drought), biological (pandemic and epidemic – COVID-19, Dengue, etc.) disasters, which in the past has caused massive deaths and property loss.

Man-Made Disasters: Pollution, toxic smog, environmental degradation, major road or air accidents, and building fires are commonly observed in Pakistan.

Complex Emergencies: In addition, some people perceive that Pakistan is at risk of complex emergencies like war, displaced populations and armed conflicts.

5.3.1 Retrofitting Risk-Prone Buildings

As a disaster risk reduction strategy, the National Disaster Risk Management Fund (NDRMF) is retrofitting some risk-prone schools and hospitals in KP and Balochistan on a very limited scale, to avoid potential losses caused by any future earthquakes. The scale can be enhanced by initiating special EIPWs, but a prior detailed vulnerability assessment and risk evaluation is a prerequisite, which may take longer time.

5.3.2 Flood Prevention and Mitigation

Pakistan has faced several flood events, including two major floods in 2010 and 2011. Climate change effects of enhanced surface water flows from rainfall and glacier melt have tremendously increased the risk of floods. Changing rain and monsoon patterns have made few areas of KP, South Eastern Punjab, and Central Sindh vulnerable to floods. Flash floods are another phenomenon which is being observed in rural as well as urban areas.

There is an increasing need to reduce or eliminate long-term risks to people, land, roads, buildings and other infrastructure through investments in structural measures of flood risk management. These include construction of dams and water storage reservoirs, flood *bunds* and embankments, flood walls, strengthening and improving existing flood infrastructure, diversion of floodwater, river training works, retaining walls, and gabion spurs. In fact, greater surface water flows can be converted into an opportunity with smart and effective planning coupled with good infrastructure.

In Pakistan, localized small scale floods that affect limited geographic areas and communities are common. For flood risk management of such areas, employment-intensive and local resource-based approaches towards small infrastructure development have been successfully executed in several countries. Inclusive and participatory approaches with minimum use of capital-intensive equipment/technology and greater use of environment friendly construction methods are key features of such schemes.

Provincial Irrigation Departments, and the Water Resources Division (federal)[16] are working in collaboration with the National Disaster Management Authority/Provincial Disaster Management Authorities for flood control structures. In addition, the National Disaster Risk Management Fund is also rolling out small flood prevention and mitigation schemes. The Provincial C&W Departments have their own schemes under the Flood Emergency Reconstruction and Resilience Project (Road Component).

5.3.3 Rehabilitation of Public Buildings and Roads - Karachi Rain Flood

The recent flash flood caused by unprecedented monsoon rains have adversely affected Karachi city, shutting down businesses, shops and markets for several days. It destroyed infrastructure worth billions of PKR. Choked waterways and drainage systems due to poor urban planning/management resulted in standing water on roads in all parts of the city. This scenario not only damaged roads but also caused great losses to buildings and other civil infrastructure. As a rehabilitation measure, provincial/federal government may allocate some budget for repair and maintenance of roads and government buildings. Such work activities can create short-term employment at a significant scale.

[16] Normal/Emergent Flood Programme

5.4 Forestry - Environment Rehabilitation through Afforestation & Reforestation

Forests are the most important element of an ecosystem which play a key role in biodiversity conservation, water regulation, and sediment control. Furthermore, forests provide raw materials to many industries and supplement the livelihoods of local communities.

Increasing forest areas is a cornerstone of the incumbent government's policy to offset growing effects of global warming and climate change. The government has rolled out its flagship programme – 'Plant for Pakistan', under which 10 billion saplings will be planted across the country including one billion in KP over a period of five years. Already, the Forest Department's nurseries comprise of 540 hectares are growing saplings. Last year, under the Billion Trees Afforestation Project (BTAP), the provincial government of KP launched a plantation campaign.

Box 7

Forest Depletion in Pakistan

In 1990, Pakistan had a 3.3% forest cover, which since then has experienced a negative trend of large-scale deforestation and forest degradation. Presently, Pakistan's forests only cover 1.9% of the total land area (FAO 2016 data), which is very low in comparison with a 31.3% average, based on 194 countries. With such a small forest area, Pakistan ranks at 173rd position among 194 countries. The forestry sector contributes a mere 2.09 percent to the agriculture sector GDP and 0.39 percent of GDP (Economic Survey of Pakistan 2017-18). Moreover, forests provide employment to over 500,000 workers in forest based industries, with hundreds of thousands of people partly dependent on these forests for livelihoods and firewood.

Afforestation and reforestation are employment-intensive activities, which can provide employment to thousands of workers. The government has suitable land which can be used to increase plantation coverage. Some of these opportunities have been outlined below:

- Punjab and Sindh provinces have the largest canal irrigation network in Pakistan. The Irrigation Departments have a "right of way" several times greater than the width of the water channels (canals, branch canals, distributaries, and minors) and their adjacent tracks. Even, when leaving 5 – 10 feet space from the channel slope, there is sufficient land areas to the tune of 200 feet at some places that can easily be used for tree planting. Due to the close proximity to the water channel, such plantations can grow easily. Department staff can regularly patrol to look after the channel banks and water flow. Their attention can ensure a higher survival rate of new plants.

  Unfortunately, the trees on water channels come under the mandate of the provincial Forest Departments and the Irrigation Department has no role in such plantation. Resolving such institutional mandates/arrangements and providing some extra staff can enable Provincial Irrigation Departments to plant millions of trees on water channel banks.

- The Provincial Communication and Works Departments look after all provincial roads (except Motorways and National Highways). The Department also has a surplus "right of way" on both sides of the roads, which may go more than 100 feet at some places. Contrary to motorway and ring road construction, horticulture/plantations are not made part of the construction contract for provincial roads. As a result, thousands of kilometers of provincial roads do not

have any plantation despite fertile land and availability of water. Contracts could be issued for planting trees along the roads and their initial care for one to two years.

- Government land is available in almost every district, which are periodically given on lease to the public at a very nominal rent, even less than PKR 1000 per acre per annum. Such lands are also suitable for tree plantations.
- Grazing fields and unclassified wastelands in the provinces were declared as protected forests area. Such areas have a lot of pockets suitable for plantation.
- The Ministry of Railways has sufficient lands on both side of the railway tracks. It also owns land at many railway stations, being used for agriculture purposes. Usually, such lands are leased out annually/periodically. Government can also use these lands for plantation.
- Land along river beds, is another suitable place for massive forestation.

5.5 Climate Change Adaptation Works

In recent years, Pakistan has experienced adverse consequences of climate change, causing unexpected events like increase and unusual variability in temperature, erratic trends of precipitation, frequent floods, droughts, storms, and movement of climate regions. The impact of this complex phenomenon is quite visible on agriculture, livestock, water, food security, human beings and the environment. Declined crop yields, greater prevalence of pests and diseases, decrease in cultivable land due to greater soil erosion (caused by runoff water), and degradation of quality of surface and groundwater are some of its adverse effects.

Extraordinary events like floods, droughts, heat weaves, and erratic rains are being dealt with as one-off natural disasters by the government and donor agencies. In fact, the government should consider them an essential feature of the environment and thus carry out multifaceted climate change adaptation strategies[17]; most importantly to help climate-vulnerable rural communities to mitigate the adverse impact/risks on their income generating resources/livelihoods as well as living conditions.

Box 8

Pakistan - Vulnerable Country to Climate Change

Pakistan generally has a warm climate which makes it highly vulnerable to negative impacts of extreme climate changes. It ranks fifth in the "Global Climate Risk Index 2020", which categorizes countries that suffered most from extreme weather events during 1999-2018.

To reduce vulnerability, Pakistan needs well-planned preventive adaptation strategies that aim to: a) eliminate or reduce exposure through measures like planting trees, building flood protection *bunds*; b) reduce sensitivity through climate proofing of structures and irrigation schemes; and c)

[17] Reducing vulnerability to the effects of climate change and enhancing capacity at individual and society level to respond to, prepare for and adapt to climate change in ways which enhance development and social inclusion (ILO).

enhance adaptive capacity through improving water management, and using climate smart agriculture techniques. Both structural and non-structural approaches should be part of such strategies.

Considering the local context, Pakistan needs to invest in the following types of infrastructure, using short-term, medium-term, and long-term approaches:

- Soil and water conservation
- Irrigation resources
- Forestry
- Flood control and protection
- Urban and rural drainage system
- Rural transport and accessibility

Such investment in infrastructure can be categorized into two:

a. Improvement or climate proofing of existing infrastructure such as raising and strengthening flood protection embankments/strengthening water-retaining structures;

Construction of new infrastructure in accordance with anticipated impact of climate change. For instance, small dams and retaining structures should be designed based on predicted/projected water flow and pressure.

It is pertinent to note that rolling out such interventions requires a prior detailed vulnerability assessment and risk evaluation along with their possible impact on vulnerable geographic areas and communities. Interestingly, all above-mentioned interventions do also fall within the context of rural development, rural settlement upgradation, and disaster management response; either with similar or different nomenclature.

All the related interventions have already been discussed in the preceding sections under respective headings, except urban drainage system, given below.

5.5.1 Cleaning Urban Drainage Systems / Storm Water Drains

Due to climate change, rainfall intensities in a single day has exceeded. Short and intense precipitation spells have become very common. In Sindh, during 2005-2009, there were 19 rainy days when rainfall exceeded over 100 mm in a single day[18]. Such intense precipitation in cities requires highly effective urban drainage systems to avoid flooding[19]. With storm water drains obstructed, encroached or partially filled with solid waste, cities are at risk of urban flooding during every monsoon. EIPWs aimed at cleaning such drains can save valuable public and private assets in cities.

5.6 Waste Management

Pakistan lacks waste management infrastructure in rural as well as in urban areas, creating serious environmental problems. A lack of urban planning, inadequate resources, and low public

[18] Climate change in Pakistan Focused on Sindh Province by Ghulam Rasool (2012)

[19] Urban Flooding is caused by excessive surface runoff in developed areas where the water does not have anywhere to go.

awareness contribute to already existing challenges. The following are some of the areas which need immediate attention of federal and provincial governments.

5.6.1 Promoting Tourism – Cleaning and Beautification of Tourist Sites

Pakistan is known for its spectacular mountains and beautiful valleys. The Government of Pakistan has been promoting tourism in all possible ways, which has helped attract a great number of tourists to Pakistan's famous tourist points in the near past, except a temporary recession caused by COVID-19. Improvement of the road network[20] have played an important role in easing travel for tourists.

With an increase in tourist traffic, the natural beauty of Pakistan's famous tourist points is fast deteriorating. A lot of littering and trash by tourists has been observed in these areas (plastic bottles, shopping bags, packets of food items, etc.), which has been accumulating at these sites. Due to lack of civic sense, and unavailability of proper trash/waste disposal system, these scenic places are turning into filth depots.

In addition to this, numerous ugly makeshift shops have popped up at these locations, which have in turn utterly ruined the scenic beauty of these areas. These makeshift shops mostly dump their trash/waste either at the backside of their shops or dispose them in nearby water streams/rivers. Environmental deterioration and waste disposal are a problem at almost all tourist points, however, some of them suffer more primarily due to relatively greater tourist traffic.

Two types of interventions can be designed to improve the situation at Khagan, Naran, Swat, Babusar Pass, Lake Saif ul Malook, Skardu, Lulusar Lake, Neelum Valley, Kumrat Valley and Nanga Parbat Base Camp:

- Hiring hundreds of people for garbage collection and disposal services in order to clean and restore the tourist spots into their near original form with restoration of grass, ornamental plants, and trees with manual labour. Moreover, the kiosks/small shops can be constructed or remodeled in a way that aligns well with the natural environment of the spots. An institutional arrangement in this regard is essential which can place trash bins at different places and collect trash regularly, even after completion of proposed interventions. As part of this exercise, it is important to find sustainable solutions for safe disposal but preferably recycling of the collected trash.
- Many tourist places lack proper sewerage systems. For instance, dozens of hotels in Swat (Bahrain) are situated on the river and sewage is directly channeled into the river. The same is the case with Ratti Gali (Neelum Valley). A proper sewerage system needs to be constructed at these sites while the existing ones can be improved/rehabilitated at many other sites.

[20] The Karakorum Highway from Islamabad to Khunjrab Pass, Swat Motorway, and Kalam Expressway are operational whereas the Neelum Expressway and Carpeted Road to Skardu are under construction.

5.6.2 Eliminate the Waste Collection Backlog

Pakistan generates over 20 million tons of solid waste annually[21], which is experiencing an annual growth of about 2.4 percent. All major cities are facing enormous challenges of waste collection and disposal. The challenge is becoming tougher day by day due to lack of urban planning, poor institutional capacity of respective departments, outdated infrastructure, and lack of civic sense among public. As a result, waste is accumulating and building up on streets, roadsides, railway tracks, canals, and other common areas. Moreover, inefficient waste disposal and management is causing pollution and causing great harm to the environment.

Following the footsteps of many other countries, Pakistan is in the process of enforcing a complete ban on the manufacturing, sale, purchase and use of non-degradable single-use plastic and polythene bags. These non-biodegradable bags are poisoning the soil, damaging sewerage system of cities, choking water ways, spreading epidemics, causing water pollution and endangering aquatic life.

The situation necessitates to take comprehensive but sustainable measures to address waste management issues, primarily caused by poor public service delivery. The employment-intensive activities/work packages, which can be undertaken to remove the waste collection backlog are given below:

a. Cleaning and removing solid waste heaps from villages, towns and cities along with dumping in landfill sites;

b. Waste collection and removal from public places such as parks, graveyards, sports grounds, etc.;

c. Maintaining landfill sites;

d. Improving recycling and composting infrastructure/facilities/units under Public Private Partnership (PPP) modes of financing (public-funded, private executed).

Waste management is the responsibility of local governments, but lack of funds, poor resource management and rapid urban growth have worsened the situation. Therefore, the primary focus of designed work activities should be on the un-serviced areas where waste collection is either poor or non-existent. In such areas, local people can be trained and their linkages with recycling and compositing facilities can be developed. To make it successful, there is a need to develop a recycling/composting industry (facilities/units) under the PPP model through giving incentives. Such units should be encouraged to set up major collection centers in various urban/rural areas.

Initially, such individuals can be hired on daily wages under a EIPWs programme. After imparting training in collection and separation of solid waste for recycling, coupled with establishing their linkages with recycling units, they can earn their livelihood through selling such waste to collection centers.

[21] Source: Environmental Protection Agency (EPA)

In South Punjab, there are many such people who collect biomass and other waste material on a daily basis from rural areas and sell such material to brick kilns which are in dire need of biomass fuels.

5.7 Care Economy – A Pathway to Employment

The care economy is a growing field across the world which has immense potential to create jobs and can help countries like Pakistan to overcome the twin challenges of unemployment and a growing population of elderly people and patients who require continuous or intermittent care at home.

5.7.1 Need for Community Health Workers

The health sector has never been a priority for Pakistan's successive governments. Due to macroeconomic imbalances, no government could spend an adequate and substantial percentage of GDP on health. As a result, Pakistan's health indicators are today far below the comparable countries. Pakistan is currently facing grave health challenges, some of them are outlined below:

1. During the peak days of the first wave of COVID-19, Pakistan's already over stretched health system was on the verge of collapse as bed occupancy in large cities reached a 100% level. Thus, the government authorities started encouraging relatively stable patients to receive treatment and care at their homes. Presently, several countries including Pakistan are experiencing a second wave of COVID-19 and everybody is worried about country's preparedness for current crisis.

2. Pakistan carries one of the world's highest burdens of hepatitis. It has the world's second highest prevalence of hepatitis C, second only to Egypt[22]. In Pakistan, over ten and five million people are affected only with hepatitis C and B respectively[23] and thousands of new patients are reported every year. Such high prevalence is due to several factors associated with both the health care setup and living conditions. The major causes of disease spread are re-use of syringes, shaving at barbers, ear and nose piercing and unsafe surgical practices. Given the circumstances, Pakistan, with its limited resources, should give more attention to effective preventive strategies to reduce the disease burden rather than heavily investing in a curative regime.

3. Pakistan is ranked fifth with 630,000 cases (364 cases / 100,000 people), among the 22 countries that are heavily burdened by tuberculosis (TB). According to the National TB Control Programme, every year 413,450 cases of TB are reported whereas almost 60,000 people die every year from the disease. The key reasons indicated by WHO include delay in diagnosis, unsupervised, inappropriate and inadequate drug regimens, poor follow-up and lack of a social support for high-risk populations.

[22] https://www.who.int/news-room/
[23] https://www.who.int/hepatitis/news-events

4. Approximately 12 million (40.2%) children are stunted in Pakistan, which is the highest statistics of stunted children in the world after India and Nigeria[24]. Sindh is the most affected province with more than a 50% ratio. Moreover, Pakistan is plagued with high numbers of infant mortality and incidences of malnutrition.

The COVID-19 pandemic has put all eyes on the health sector and created an opportunity for the sector to seek more resources. At present, the abovementioned concerns present a crisis like situation. The situation cannot even marginally improve under the current institutional framework. A special EIPW in the health sector, embedded within a large-scale community health worker programme may contribute to addressing these challenges. The government can hire young educated men and women in rural areas and urban slum areas, coupled with a core component of training aimed at imparting essential skills of community health services. Such initiatives aimed at health promotion and disease prevention activities can reduce the burden on the public healthcare system and provide temporary/permanent employment opportunities to thousands of unemployed.

Pakistan's government can handle the new wave of COVID-19 in a better way, if thousands of trained community health workers/caregivers are made available and accessible throughout the country, who can provide home-based care services to patients. Such community health workers programme can: a) conduct awareness campaigns about different diseases through corner meetings and the distribution of informative literature; b) facilitate undiagnosed patients of TB, Hepatitis, Dengue, COVID-19, etc.; c) provide care to the diagnosed patients, as and when required; d) facilitate families to take essential minerals/elements required by the human body; and e) collect data of their respective villages related to patients/diseases/health indicators to feed the formulation of evidence based policies and programmes.

Box 9

Public Work Response - Challenge of HIV-AIDS and Stunting among Children

In Southern and Eastern Africa, the challenge of high prevalence of HIV-AIDS and stunting among children have been addressed through public works responses aimed at providing support to the social infrastructure in locations affected by high disease rates. Interventions like provision of home based care in Zimbabwe (Red Cross's Home Based Care Programmes), and the early childhood care and development programme in Malawi (UNICEF Malawi Early Childhood Development Program) are classic examples of public works to address healthcare related crises.

The initiative can complement/strengthen the already announced national plans of the Ministry of National Health Services, Regulation and Coordination (NHSRC) to control disease prevalence.

5.7.2 Need for Caregivers/Care Workers

Resource-constrained countries such as Pakistan, where the public health sector is already over-stretched, require an organized care-sector, providing home-based care services to the following:

[24] https://www.unicef.org/pakistan

1. As of 2019, around 7% of the total population of Pakistan is aged over 60, to the tune of 15 million people. The proportion of older people is expected to increase in the future due to increased life expectancy. An ageing population has increased the demand for elderly care and health services. Visual impairment, arthritis, incontinence, osteoporosis, and difficulty in hearing, walking, and chewing are some of the problems which require part-time assistance or full-time attendance.

2. Caring for the disabled, who are unable to function properly and have dependency on others, is a challenging task, especially if such a person faces poor health. Pakistan has over 3.2 million disabled persons[25] and many of them need some form of assistance for their daily care – either from family members, neighbors or paid caregivers.

3. Pakistan ranks high among the countries affected with high rates of kidney diseases. Medical treatment by quacks in rural areas, and widespread prevalence of diabetes, obesity and hypertension are some major underlying reasons to the ever-increasing prevalence of kidney diseases. The number of patients that require regular dialysis are growing and hospitals are getting overloaded with patients. Such patients usually require a personal attendant, who can take them to hospital and attend to their needs during and after the dialysis.

4. In middle class families, the trend of women employment is increasing. Such working women, living in nuclear family system, face childcare issues. Day care centers are one option but mostly such centers provide child care services for children aged between 1 to 5 years old and as a result, families have to arrange a child caregiver at their home for children above five years/school-aged children.

Changes in demography, including a population explosion and ageing population, increasing rates of urbanization along with changes in the social fabric of the society containing a shift from joint family setups to nuclear families, are contributing factors for a growing need of formal provisions of childcare, elderly care, and patients/disabled/handicapped care (at home) on a regular or intermittent basis. The demand for affordable care services by middle class families is increasing, which can be met by greater supply of caregivers.

Public investments in the form of PWPs can help develop these care services at large in the formal sector through skills training, initial employment of young men and women, and the facilitation of the private sector through tax/non-tax incentives. The provision of affordable services from caregivers can also reduce many barriers to women's participation in the labour market and can help bridging the gender employment gap. However, the biggest challenge for developing community health workers and caregivers at a large scale is their hiring, curriculum development and training in a short time-frame.

[25] http://www.pbs.gov.pk

5.8 Conducting Long Awaited Census of Different Sectors

Many sectors lack updated and reliable statistical data, which is generally required for the formulation of evidence-based policies and strategies. Even district- and tehsil-segregated data is essential for rolling out programmes and projects. Pakistan conducts many census and surveys periodically to gather information about socio-economic status indicators resources/indicators. Such data is also used by private investors to take investment decisions.

There are some periodical censuses which are long overdue. In their absence, government departments as well as development agencies and other stakeholders resort to calculating their own projections based on last census reports and incremental change estimates. Such estimates are only indicative and vary from organization to organization.

Young unemployed men/women with matriculation or above education can gather information at grass root level for such censuses under the institutional framework of the Pakistan Bureau of Statistic. In this way, across Pakistan they will get short-term employment in their respective union council.

The following censuses can be undertaken immediately under this intervention:

1. Pakistan Livestock Census: Previous censuses were conducted in 1976, 1986, 1996 and 2006;

2. Pakistan Agricultural Machinery census: Previous censuses were conducted in 1968, 1975, 1984, 1994 and 2004;

3. Agricultural Census: The previous were conducted in 1980, 1990, 2000 and 2010;

4. Economic Census of Pakistan. The last one was conducted in 2005, and the figure of 3.2 million businesses was taken from this census, which is still being used by government and development agencies for policy formulation and designing development programmes.

6. Limiting Factors and Implementation Challenges of EIPWs Programme

Employment-intensive approaches optimize the labour share in the total investments made to construct and maintain various types of infrastructure. The key limiting factors to prioritize labour inputs are: a) availability of labour with required skills sets; b) cost-effectiveness of labour; c) technical feasibility to meet quality standards/technical parameters of the work by use of labour; and d) previous experience of the implementing agencies with these approaches.

In Pakistan, time is the crucial factor, which sometimes gets greater importance in comparison with costs, when opting for greater use of equipment. To meet the timeline given in works contracts and to avoid paying penalties for delayed completion, contractors in Pakistan have the tendency for greater use of equipment. Furthermore, work contracts issued by government departments, autonomous entities and development agencies do not bind contractors to carry out

specific work activities using labour intensive techniques. Therefore, to save time and to avoid hassles of labour hiring and managing, contractors prefer using equipment-based approaches, even for those work activities where labour is more cost effective and can meet technical specifications.

Due to various considerations, federal and provincial governments in Pakistan have in the last three decades rolled out several projects with short timelines, especially closer to elections. This compels governments and contractors to use equipment-based approaches to meet tight completion schedules.

The labour availability in rural areas varies from district to district and in different months of the year depending upon the agricultural profile of the districts, prevailing cropping patterns and cropping intensity. During the harvesting season of major crops like cotton, sugarcane, maize and wheat, which have not been mechanized so far, the labour availability in some districts is a challenge to be reckoned with. For example, during the wheat[26] harvesting season, migrant labour return to their villages and as a result, the construction sector experiences temporary slowdowns in rural as well as in urban areas of Punjab and Sindh provinces. However, in a post COVID-19 scenario, labour shortages in rural areas are not expected to be a constraint for using labour-intensive approaches in public works, due to the return of migrant workers from urban areas.

With the prevalent rates of wages and equipment operating costs, employment-intensive approaches are cost competitive, especially for developing local/rural infrastructure. Pakistan lacks a comprehensive job seekers registration and district/tehsil/village-segregated data of unemployed persons, which could help contractors/employers recruit skilled/unskilled workers as and when required. Very often, the issue of labour hiring in large numbers compels the contractors to go for equipment-based approaches, especially when labour demand varies significantly across the different phases of work (foundation, walls, roof, etc.).

Since EIPWs involve a larger labour force, implementation arrangements and guidelines must be available in a detailed way encompassing labour output standards, wage rates, working conditions, social and environmental safeguards, and role of government, contractors and communities from the inception to project closure phase. ILO has already developed and successfully implemented these guidelines/standards in several countries. However, the management and supervisory staff need to be trained effectively to use these approaches.

In addition, the implementation of large scale EIPWs requires capacity development of managers and supervisors. They need comprehensive training to manage a large labour force to achieve required labour productivity and quality of work, along with meeting deadlines/timelines. Moreover, such training should also be offered with a technical module (construction skills/sector-specific technologies) in order to ensure consistency in quality of work. Such capacity development initiatives will reduce the time required to contextualize the employment-intensive approaches within local environments.

[26] Wheat is the largest crop of Pakistan with a crop area of over 20 million hectares.

Due to a lack of information, it is widely believed in Pakistan that employment-intensive methods in construction/infrastructure sector consume more time (slow) with higher cost (expensive), and provide lower quality. However, from a conceptual framework supported by experience across the world, it is clear that properly designed and managed EIPWs can meet all three constraints (time, quality, and cost) to construct and maintain certain types of infrastructure. However, proper design and control, and capacity building of managerial and supervisory staff are essential prerequisites for successful implementation. It is pertinent to note that political will and government commitment can serve as a catalyst for promoting EIPWs as a viable employment creation strategy.

7. Public Works with High Employment Potential

Employment-intensive public works are usually initiated with dual objectives:

a) Creating short- and medium-term employment for vulnerable workers;

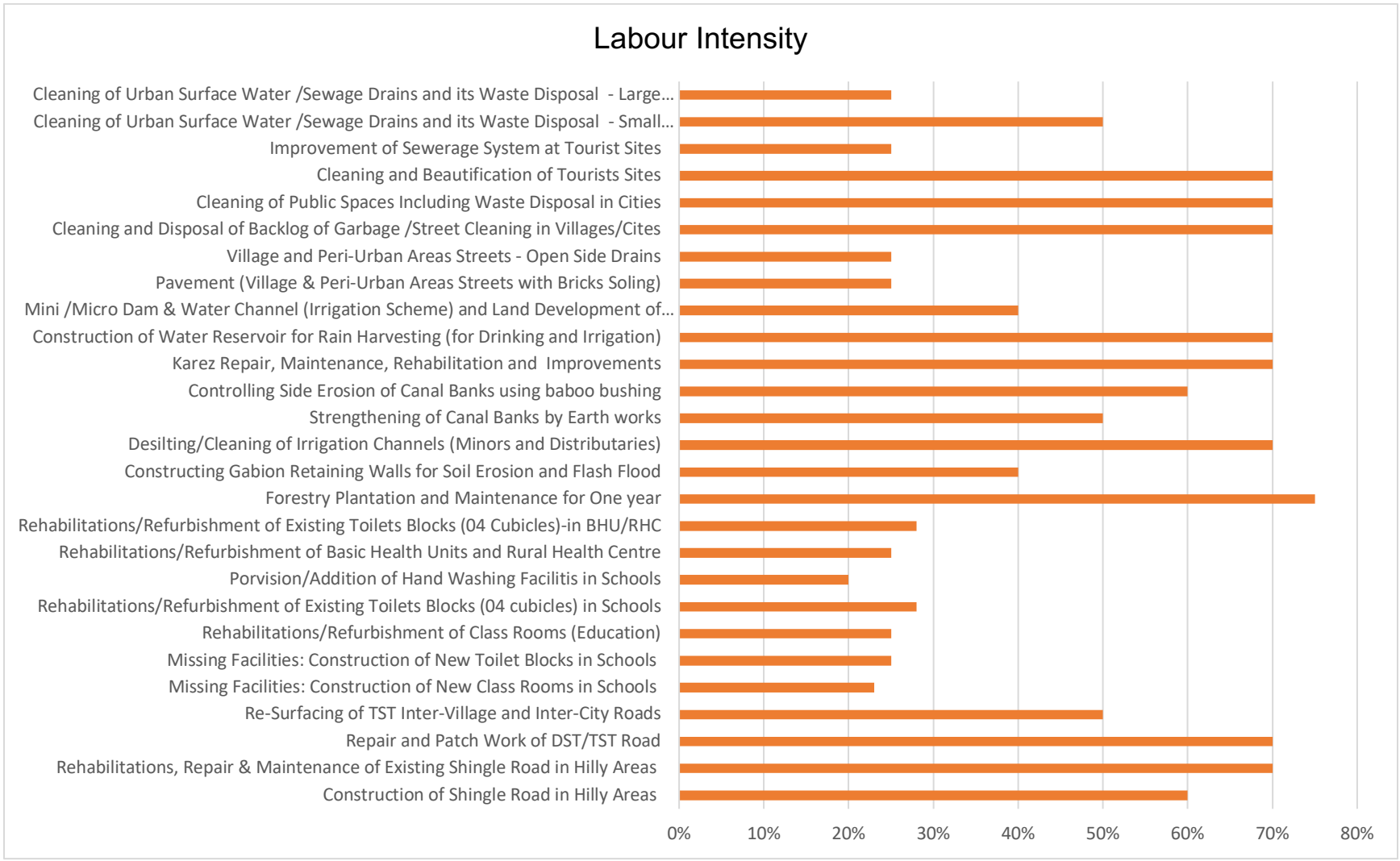
b) Developing valuable assets for the community that can enhance their livelihood outcomes or improve human development through the provision of basic civic facilities, and greater access to health and education.

In all preceding sections, the specific interventions for each sector have been proposed focusing on the potential of immediate and short-term employment creation along with use of local resources to the maximum possible extent, thereby further facilitating local economic development. However, interventions that can improve livelihood opportunities in a sustainable manner within a longer-term perspective have also been given due attention.

The recommended interventions have been mapped in the following Figure 1 with respect to "potential for creation of employment opportunities (labour intensity)[27]". **Annexure 3** provides details of cost estimates of the recommended interventions as well as their potential for job creation in terms of work-days. The rough cost estimates are based upon "Market Rate System – MRS", published biannually by the Finance Department, cost estimates of projects given in the provincial ADPs, internal working of respective government departments, and expert judgment.

[27] The degree to which a project applies labour-intensive work methods is commonly measured by the portion of the total expenditure used for payment of wages.

Figure 1: Potential of Creation of Employment Opportunities (Labour Intensity)



8. Recommendations

In light of the forgoing discussion, major policy and programmatic recommendations are given below for the design of new projects by the Planning Commission and other relevant ministries/departments.

1. To limit the immediate economic fallout of COVID-19 on the livelihoods of vulnerable groups, the government may go for a good mix of:

    - Macroeconomic policies to revitalize those economic activities which can reduce the negative impacts on employment;
    - Specific support/fiscal stimulus packages for the revival and support to the business sectors/SMEs, which can provide employment to vulnerable workers;
    - Initiate new employment-intensive public works programmes that can generate new employment opportunities for unemployed or underemployed workers, especially the youth.
    - Set up a permanent institutional mechanism within government that can deal with chronic challenges as well as new crisis situations that may have serious impacts on the economy and the labour market.

2. Initiate employment-intensive public works that have already been proven and time tested in Pakistan and elsewhere, using established work methods/tools, developed by ILO and other organizations, which are applicable in a wide range of socio-economic settings. A large agenda of the incumbent government is to provide employment/jobs to the youth at a large scale. Unfortunately, the COVID-19 pandemic has caused further unemployment as a result of the lockdown and economic slowdown. To top it off, every year four million new youth enters the job market. Job creation through EIPWs can contribute to addressing these challenges both during and after this pandemic.

3. Rather than using EIPWs as one-off interventions for economic recovery in response to COVID-19, there is great potential for mainstreaming employment-intensive investment approaches not only in infrastructure and environmental programmes, but also in other economic development programmes. These would help create additional jobs with the same amount of investments.

4. EIPWs can be used as complementary course together with other stimulus measures for the job market. EIPWs philosophy can set the direction of public sector investments not only during this pandemic but also in the long-term so as to decrease chronic unemployment and underemployment. It is widely recognized that among a wide range of poverty alleviation strategies, increasing job opportunities is one of the most effective strategies.

5. EIPWs have the potential of playing a significant part of a larger social safety net to alleviate poverty and protect vulnerable and ultra-poor segments, as already practiced by India, Bangladesh, Nepal and several other countries.

6. For the approval of regular and special development schemes/investment programmes under PSDP/ADPs, the government should apply an employment/livelihood lens to prioritize projects:

    a. having a higher potential of job creation along with greater labour component[28] in the overall project cost (degree of employment intensity);

    b. intending to develop or maintain such valuable infrastructure assets or public services that increase or sustain livelihoods and develop local communities - with a greater impact.

7. In PC-1, along with the existing entry of direct and indirect employment creation (impact of project), it would be useful to add a special entry of "wages amount of the total project cost" to evaluate the employment creation during the construction phase of project. It would help sensitize policymakers and project designers about the money going to material, machine, and labour components.

8. The use of machines are increasing in infrastructure works in Pakistan due to their greater availability. Even in such cases, EIPWs can be undertaken with following two recommendations to enhance employment outcomes:

    a. Concentrate on public works that are labour-intensive by default (repair and maintenance works of existing structures, land and environmental improvements, forestry, landscaping and horticulture, sanitation, community works, etc.);

    b. In order to increase the labour component in public works, promote employment-intensive technology and work methods where use of labour can serve as a competitive/cost-effective substitute of equipment-based work methods.

9. Expand the ambit of employment-intensive approaches. While civil works in general and roads in particular have been the major focus of such approaches there is also a wealth of experience allowing the approaches to be replicated and scaled up in other sectors. Past EIPWs have also successfully covered work related to land and water conservation, environment management, climate change adaptation, social-care, forestry, etc. Such sectors are receiving increased attention in several countries.

[28] The degree to which a project applies labour-intensive work methods is commonly measured by the portion of the total expenditure used for the payment of wages.

10. Instead of large-scale projects with multi-billion budgets, aimed at construction of mega structures, it is recommended that the government give more emphasis to developing the smaller scale local infrastructure required in order to provide basic services in rural areas and low-income settlements. This type of works usually involves small work packages which can be accessed by local small and medium size contractors and can be completed in a shorter duration of time. For such works, it is often possible to utilize standard designs, thus simplifying procedures and documentation (tendering and bidding documents, drawings, BOQ). This type of works is also more conducive to employment-intensive works methods. In such small contracts, clauses like use of local resources and labour can also be added and monitored effectively by respective field formation of line departments.

11. Increase the participation of local communities in the design and implementation of rural infrastructure works along with the use of locally available skills, materials, and work methods. All these can enhance effectiveness, impact, and sustainability of these interventions. The World Bank funded Punjab & Sindh Irrigated Agriculture Productivity Enhancement projects of water courses lining are based upon these principles, with active involvement of local communities in the design, procurement and implementation.

12. Being a labour-intensive activity, increased forest cover and tree-plantation in Pakistan can produce significant numbers of employment as well as address climate change, reduce greenhouse gases and decrease global warming. The objective can however be expanded to promoting livelihoods of local communities by supporting related economic activities. Trees are of many types and species, planted for manifold purposes such as furniture, building construction, fire wood, fodder trees with edible leaves and pods, leaves made into silage, fruit trees, drought and cold resistance, shady trees, pulp and paper, plywood, structural timber, scaffolding, flood protection, reducing soil erosion, wind breaks, apiculture, watershed management, sericulture and above all fire resistant trees (Pinus Caribaea and Tectona Grandis), which are used as fire breaks on fire susceptible sites.

    The trees should be planted taking into account the needs of the country/province/region and that should be in line with available land and water resources along with nature of agro-climatic zones by using best natural resource management practices/techniques. During the last three decades, Eucalyptus trees were indiscriminately planted at highways and other places irrespective of the soil profile, even in those areas, where groundwater levels had already declined and such trees adversely affected the groundwater due to its high use of water, standing at 785 liters/kg of total biomass.

13. Every year, provincial Irrigation Departments undertake de-silting of water channels (distributaries and minors) at a large scale. It is recommended that de-silting of minors (small irrigation channels) less than 8 feet wide, is carried out by labour and not by excavators and dumpers. Such heavy machinery destroys the minor's banks. Already the Irrigation Department has such instructions for its field operations, but these are not followed in true

letter and spirit. Such minors are in thousands in number and in rural areas, by and large, labour is abundantly available during the de-silting months.

14. To secure that employment-intensive work methods are applied for certain work activities, it is recommended that appropriate clauses are included in works contract to bind contractors to such approaches. Using excavator(s) for excavation of foundations of smaller buildings has no justification when labour can accomplish the same work in a better way and with less cost. Moreover, roaming such heavy machinery around the site/foundation banks also causes damage to the site.

15. Rethink the technology shift for construction of local roads. The provincial Communication and Works departments are increasingly using ”Aggregate Base Course” and “Asphalt Wearing Course” technology, requiring the use of equipment, rather than traditional “Water-Bound Macadam Base Course“ and “Triple Surface Treatment – TST” technology, which is relatively more labour-intensive. To make best use of limited budgets, it is important that cost-effective designs are applied to the extensive network of local roads in the country. With lower traffic volumes and reduced design speeds, local roads do not need the expensive designs applied to highways (roads with Asphalt Wearing Course are relatively expensive). Instead, it is recommended to apply tested low-cost pavement designs that increase the potential of job creation and avoid utilizing limited budgets towards operating costs of heavy machines and equipment. Only in Punjab province, PKR 15 billion has been budgeted in ADP of 2020-2021 for such small roads (with Asphalt Wearing Course), under the provincial stimulus package.

16. As a policy measure, award contracts of roads construction with the work package of tree plantation on the available “right of way” along both sides of the road. Already motorways and ring roads are being constructed with plantation/horticulture work packages. It will help increase tree plantation in the country and increase employment creation.

17. Allocate more funds for public works aimed at supporting livelihoods of local communities in rural areas through construction and maintenance of productive assets/infrastructure or to provide missing facilities to improve socio-economic conditions. This is because poverty rates in rural areas of all provinces are higher viz-a-viz their urban areas. Likewise, the focus should be greater on Baluchistan, interior Sindh, South Punjab, and KP (FATA), where poverty rates are higher compared to other areas of Pakistan.

18. Primarily, focus on implementation of EIPWs in those rural areas where cropping-intensity[29] is low, like arid/semi-arid districts of Balochistan, KP, and Sindh. Due to low cropping-intensity, the slack periods in these areas are relatively greater and thus job opportunities are limited. By contrast, cropping intensity in district Kasur, Sahiwal, Okara, Pakpattan, and Sheikhupura is very high and most farmers get three cash crops in a calendar year.

[29] Cropping intensity refers to raising of a number of crops from the same field during one agricultural year.

19. Employment-intensive approaches are new in Pakistan except for the interventions made by ILO after the 2005 earthquake. Such approaches require proper planning and execution modalities. As a first step, orientation of policy makers through workshops is essential on how employment intensity can be enhanced in on-going and new public works, especially for construction of rural infrastructure. Since government departments are the sole executor of public works, mainstreaming this approach into government planning and procedures as a sustainable long-term measure requires capacity building of officials of relevant government line departments, project managers, contractors, and communities. In addition, capacity building of private sector and employers' associations can also add value.

20. Local labour market dynamics must be analyzed before introducing employment-intensive approaches, therefore inputs from social sector specialists should be made essential in designing and rolling out EIPWs.

9. Mainstreaming Decent Work, Gender, Diversity and Inclusion

The Decent Work Agenda, envisioned by ILO, should remain a major consideration in all public works, irrespective of the project size, scale and nature of execution approaches/modalities. Since employment-intensive works have a significant labour component in comparison with other projects, the importance of mainstreaming the decent work agenda increases manifold.

Following are the major areas of Decent Work that must be considered during EIPW:

a. Wages: wage determination should be done in line with prevailing minimum wage in the province;

b. Working-hours: all EIPWs should adhere to working hours in the province and any extra work-hours should be properly compensated with overtime as per provincial labour laws;

c. Occupational Safety & Health: all EIPWs should adopt all safety measures to reduce risk of injury or fatal accidents and any risk to the health of workers;

d. Non-discrimination: all EIPWs should offer equal opportunities to women and men and there should be no discrimination in wages or any other terms for women and men in such activities;

e. Child-labour: no person less than 15 years of age should be engaged in EIPWs. Adolescent workers between age of 15-18 years can be engaged in light work only if this work does not impede their participation in education and impact on their health;

f. Forced labour: all workers should be engaged with their free will and by informing them of all their term of contracts and working conditions in advance;

g. Freedom of association and collective bargaining: workers shall be given opportunity to join their association and to negotiate with their employers/contractors for improvement of working conditions.

Presently, contracts issued by government departments to their contractors for undertaking civil infrastructure construction and maintenance works lack clauses related to the decent work agenda such as paid overtime, safe work environment, equal wages for men and women, female share in management staff, etc. Annexure 4 summarizes the current clauses of the contract issued by National Highways Authority and the provincial governments of KP and Punjab.

As a policy measure, the government can introduce additional relevant clauses related to decent work in the contracts. Through a close dialogue with key industry players, it should be possible to preempt any negative reactions from contractors/employers and soliciting their support for their effective implementation. Introducing such clauses also requires meaningful implementation of contractual provisions along with a framework of responsibility, monitoring and reporting.

Human and institutional capacity building of government and private sector entities is required to sensitize and educate about the decent work agenda, approaches to mainstream it in all types of projects including EIPWs, and how the decent work agenda can enhance quality and effectiveness of work as well as workers well-being.

Employment-intensive approaches in soil and water conservation, climate change adaptation work and environment management can create new green job opportunities, which should be one of the major considerations for initiating government PSDP/ADPs projects and developing labour market policies.

Gender, despite being immensely important, remains to be a neglected aspect in infrastructure works. Today there are few concerns in relation to promoting and protecting the position of women in the construction industry as envisioned in the ILO decent work agenda. Like in the formal sector, where gender policies are being enforced, it is important to develop special guidelines related to women workers/daily wage-earners, who are employed by government contractors to implement public sector infrastructure/social sector projects. It may require incorporating additional clauses in the construction contracts/work contracts, issued by the government.

Annexure 1: Government Labour Market Support Measures

The federal and provincial government has taken some specific measures to avoid the adverse impact of COVID-19 on the labour market and social welfare of the workers, details given below:

1. The federal government announced a relief package amounting to PKR 1,200 billion. One component worth PKR 75 billion was allocated to direct cash transfers to 6.2 million daily wage workers (*Mazdoor Ka Ehsaas Programme*), with another cash transfer component valued at PKR 150 billion to 12 million low-income families (widows/destitute)[30].

2. Financial support to utility stores worth PKR 50 billion so that workers and other poor segments of society can buy essential food items at lower rates.

3. PKR 100 billion was allocated to accelerated tax refunds to the export industry and another PKR 100 billion financial support to the agriculture sector and SMEs in the form of power bill deferment, bank lending, as well as subsidies and tax incentives to increase financial liquidity of SMEs so that they can retain their employees.

4. The State Bank disbursed PKR 213 billion to 2,633 firms so as to incentivize them to avoid laying off their workers due to the slowdown of business activities.

5. The economic package also earmarked PKR 30 billion for the housing sector to subsidize mortgages, as well as provision of tax incentives to the construction sector to accelerate construction activities and to generate employment for low-skilled daily wagers.

6. The State Bank allowed banks to defer clients' payments of principal on loan obligations by one year and relaxed regulatory criteria for restructured loans for borrowers to provide relief beyond the extension of principal repayments for one year. The objective is to help their financial liquidity/cash flow.

Apart from the federal government initiatives, provincial governments also announced some economic stimulus and social protection packages to support the most vulnerable.

1. Cash grants to low-income households: The Punjab Government announced a PKR 10 billion cash grants programme to provide relief to poor strata of the society whereas the Sindh government announced PKR 2 billion cash grants/ration disbursements and a sum of PKR 20 billion reserved in the provincial budget for 2020-2021 for the economic welfare of affected persons.

2. The Government of the Punjab has launched tax concessions worth more than PKR 18 billion for the business community in order to keep the economy moving and to generate employment/retention of current workers. Hospitals, medical consultants, the construction

[30] Under Ehsas (care) Emergency Cash Programme

sector, marriage halls, catering, laundry, beauty salons, etc., received benefits of reduced tax rates.

3. The KP government has offered a PKR 11.4 billion economic stimulus package in the form of cash disbursements to provide relief to 1.9 million poor families and tax exemptions to the tune of PKR 5 billion for the business community. However, the government of Balochistan's initiatives were limited to the distribution of Emergency Cash programme of the Federal government alone.
4. Provision of loans: The Sindh Government has reserved an amount of PKR 5 billion in the current budget to provide loans to small businesses.

Annexure 2: Housing Sector

In Pakistan, due to a higher population growth and increasing urbanization, the shortage of housing stands at around 10-12 million units. Due to increased costs of land and construction, affordability is another challenge being faced by middle class and poor strata of the society. To bridge the gap between affordability and shortage, low-cost housing projects seem to be a viable option.

While its labour (wage) component is less than 20% of the overall costs, the housing construction has the potential to absorb a large number of workers due to its large size in comparison with other sectors. In Pakistan, it absorbs 7.3% of the labour force viz-a-viz its contribution to GDP standing at 2.7%. These figures indicate its immense labour absorption capacity.

The housing sector has a high multiplier effect[31] with immense potential to create secondary (indirect) employment in over 40 business sectors - backward-linked industries, which supply building materials, accessories, tools, etc. Induced (tertiary) employment is created in education, health, hospitality, automobiles, electronic/electrical appliances sector when the earnings from direct and indirect employment are spent on hiring services and procuring goods. In this way, large-scale economic activities are generated across the country. Furthermore, it is one of the largest sectors that can absorb unskilled/low-skilled workers along with foreign migrant workers coming back to Pakistan, with construction experience.

Having recognized the housing shortage and to boost economic activities in the country, the incumbent government of Pakistan Tehreek Insaaf (PTI) recently announced an incentive package for the housing sector. In addition, it has launched the Naya Pakistan Housing Scheme to construct 5 million houses in five years as part of its economic reform agenda. The initiative will also generate employment opportunities for workers with a much broader set of skills (masons, plumbers, electricians, steel fixers, carpenters, painters, etc.). According to a recent study conducted by DFID funded – Karandaaz, the construction of 100,000 houses (mix of 3,5,10 marla) in Lahore can generate approximately 250,000 jobs (full-time-equivalents).

[31] According to a 2008 World Bank study: a dollar spent in construction sector has a multiplier effect/capacity to produce economic activity of five dollars.

Annexure 3: Proposed Employment-Intensive Public Works

Sr. No.	Sector	Activity	Unit	Unit Cost	% Labour	Contract Size (Min - Max)	Contract Value PKR (Min - Max)	Employment (Man-Days)	Duration	Remarks
1	Roads	Construction of Shingle Road in Hilly Areas	Kilometer	PKR 7,000,000	60%	1-10 Kilometer	7,000,000-70,000,000	5,250 - 52,500	One Year	12 - 14 feet Wide Rural Road, along with Allied Structure
2		Rehabilitations, Repair and Maintenance of Existing Shingle Road in Hilly Areas	Kilometer	PKR 400,000	70%	2-20 Kilometer	800,000-8,000,000	700 - 7,000	One Year (Renewable)	Repair of Culvert, Clearing Drains, Road Shoulder Repair, Surface Repair, etc.
3		Repair and Patch Work of DST/TST Road	Kilometer	PKR 250,000	70%	5-25 Kilometer	1,250,000-6,250,000	1,094 - 5,469	One Year (Renewable)	Repair & Patch Work (Including Clearance of Berm, Painting/Erection of Kilometer Stone, Boundary Pillars & Lane Marking, Opening up Drains/Cross Drainage)
4		Re-Surfacing of TST Inter-Village and Inter-City Roads	Kilometer	PKR 1,000,000	50%	5-25 Kilometer	5,000,000-25,000,000	3,125 - 15,625	One Year	Clearing of Metaled Surface, Spraying of Bitumen, Dry Rolling with Road Roller
5	Public Buildings (Schools and Hospitals)	Missing Facilities: Construction of New Class Rooms in Schools	Square Feet	PKR 3,385	23%	500-5,000 Square Feet	1,692,500-16,925,000	487 - 4,866	One Year	Class Room Size Varies: 16x24 and 20X24 feet are Common
6		Missing Facilities: Construction of New Toilet Blocks in Schools	Number	PKR 800,000	25%	1-10 Number	800,000-8,000,000	250 - 2,500	6-9 Months	One Toilet Block with 04 Cubicles Including Accessories
7		Rehabilitations/Refurbishment of Class Rooms (Education)	Square Feet	PKR 1,500	25%	500-5,000 Square Feet	750,000-7,500,000	234 - 2,344	6-9 Months	Scope may Include Roofing, Flooring , Plastering of Walls, Electrical, Carpentry Work, etc.
8		Rehabilitations/Refurbishment of Existing Toilets Blocks (04 cubicles) in Schools	Number	PKR 300,000	28%	2-10 Number	600,000-3,000,000	210 - 1,050	6-9 Months	Scope may include Water Leakage, Repair of Septic Tank and Soakage Pit, Roof Treatment, Change of Accessories, etc.
9		Porvision/Addition of Hand Washing Facilitis in Schools	Number	PKR 7,000	20%	100-500 Number	700,000-3,500,000	175 - 875	3-6 Months	Installation/ Replacement of Wash Hand Basin (WBH) Including Pipe, Tee Cock, Waste Coupling, etc.
10		Rehabilitations/Refurbishment of Basic Health Units and Rural Health Centre	Square Feet	PKR 1,600	25%	500-5,000 Square Feet	800,000-8,000,000	250 - 2,500	6-9 Months	Compared to Schools, Hospitals Require Somewhat Better Quality Work
11		Rehabilitations/Refurbishment of Existing Toilets Blocks (04 Cubicles)-in BHU/RHC	Number	PKR 350,000	28%	2-10 Number	700,000-3,500,000	245 - 1,225	6-9 Months	Compared to Schools, Hospitals Require Somewhat Better Quality Work
12	Forestry	Forestry Plantation and Maintenance for One year	Tree	PKR 370	75%	5,000-20,000 Tree	1,850,000-7,400,000	2,135 - 8,538	One Year	Forest Department Calculation / Tree Plantation Season in Feb-March and then August-Sept
13	Soil Conservation	Constructing Gabion Retaining Walls for Soil Erosion and Flash Flood	Cubic Foot	PKR 350	40%	2,000-20,000 Cubic Foot	700,000-7,000,000	350 - 3,500	6 Months	Balochistan Rural Support Program Rate

Note 1: Minimum and maximum contract values are just indicative, keeping in view that small local contractors can also bid for these work packages (each limited to a few sites only, enabling local contractors to complete work in a short time).
Note 2: Wage Rate PKR 800 per work-day used where a mix of skilled and unskilled labour is required or unskilled labour is use in major cities.
Note 3: Wage Rate PKR 650 per work-day used where unskilled labour is required with a few equipment operators.

Employment-Intensive Public Works (EIPWs) to Create Employment

Sr. No.	Sector	Activity	Unit	Unit Cost	% Labour	Contract Size (Min - Max)	Contract Value PKR (Min - Max)	Employment (Man-Days)	Duration	Remarks
14	Irrigation and Water Conservation	Desilting/Cleaning of Irrigation Channels (Minors and Distributaries)	Kilometer	PKR 99,000	70%	10-50 Kilometer	990,000-4,950,000	1,066 - 5,331	4 months (Annually Renewable)	Taking Average Width of 10 feet, 9 inch Silt Excavation, Irrigation Department Estimates
15		Strengthening of Canal Banks by Earth works	Running Foot	PKR 200	50%	5,000-20,000 Running Foot	1,000,000-4,000,000	769 - 3,077	6 months	Irrigation Department Estimates
16		Controlling Side Erosion of Canal Banks using baboo bushing	Running Foot	PKR 400	60%	2,000-10,000 Running Foot	800,000-4,000,000	738 - 3,692	6 months	Irrigation Department Estimates
17		Karez Repair, Maintenance, Rehabilitation and Improvements	Kilometer	PKR 500,000	70%	1-10 Kilometer	500,000-5,000,000	538 - 5,385	6-9 Months	Expert/ Engineer's Estimation
18		Construction of Water Reservoir for Rain Harvesting (for Drinking and Irrigation) in Arid/Semi-Arid Areas	Unit	PKR 8,000,000	70%	1-2 Unit	8,000,000-16,000,000	7,000 - 14,000	One Year	In Balochistan usually 500x500 feet Reservoirs are commonly made with Stone/Earthen Walls
19		Mini /Micro Dam & Water Channel (Irrigation Scheme) and Land Development of Command Area	Scheme	PKR 15,000,000	40%	1-2 Scheme	15,000,000-30,000,000	7,500 - 15,000	One Year	Size of Dam Varies and so is Cost
20	Urban/Peri Urban/Rural Sanitation	Pavement of Village & Peri-Urban Areas Streets with Bricks Soling Including Earth Work	Square Feet	PKR 65	25%	5,000-50,000 Square Feet	325,000-3,250,000	102 - 1,016	6-9 Months	Local Government Department Estimates
21		Village and Peri-Urban Areas Streets - Open Side Drains	Running foot	PKR 400	25%	500-5,000 Running foot	200,000-2,000,000	63 - 625	6-9 Months	Local Government Department Estimates
22	Waste Management	Cleaning and Disposal of Backlog of Garbage /Street Cleaning in Villages/Cites	Kilometer	PKR 60,000	70%	10-20 Kilometer	600,000-1,200,000	646 - 1,292	6 Months	One Time Clearing of All Backlog
23		Cleaning of Public Spaces Including Waste Disposal at Parks, Bus Stands, Stadium, Graveyard etc.	Hectare	PKR 75,000	70%	10-20 Hectare	750,000-1,500,000	656 - 1,313	6 Months	One Time Clearing of All Backlog
24		Cleaning and Beautification of Tourists Sites	Site (No)	PKR 5,000,000	70%	1-2 Site (No)	5,000,000-10,000,000	4,375 - 8,750	6 Months	One Time Clearing of All Backlog
25		Improvement of Sewerage System at Tourist Sites	Site (No)	PKR 7,500,000	25%	1-1 Site (No)	7,500,000-7,500,000	2,344 - 2,344	6 - 9 Months	Scheme Size may Vary from Site to Site
26		Cleaning of Urban Surface Drains and its Waste Disposal (Drains Carry Storm Water & Sewage Water Drains) - Small Drains	Kilometer	PKR 500,000	50%	4-40 Kilometer	2,000,000-20,000,000	1,250 - 12,500	6 Months (Annually Renewable)	Average 8 feet Wide, 2 feet Garbage - Manual Work, but Dumper is used for disposal
27		Cleaning of Urban Surface Drains and its Waste Disposal (Drains Carry Storm Water & Sewage Water Drains) - Large Drains	Kilometer	PKR 2,200,000	25%	5-20 Kilometer	11,000,000-44,000,000	3,438 - 13,750	6 Months (Annually Renewable)	Average 25 feet Wide, 3 feet Garbage - Excavator and Dumper is Used with Labour

Annexure 4: Contract Clauses Related to Labour

The contracts issued by different government entities to their contractors have following clauses related to the labour.

1. National Highways Authority (NHA)

Clause 16.4

Employment of Local Personnel

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour from sources within Pakistan.

Clause 19.3

Safety Precautions

In order to provide for the safety, health and welfare of' persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of Pakistan with such modifications thereto as the Engineer may authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose.

The Contractor shall make, maintain and submit reports to the Engineer concerning safety, health and welfare of persons and damage to property, as the Engineer may from time to time prescribe.

Clause 19.4

Lighting Work at Night

In the event of work being carried out at night, the Contractor shall at his own cost, provide and maintain such good and sufficient light as will enable the work to proceed satisfactorily and without danger. The approaches to the Site and the Works where the night-work is being carried out shall be sufficiently lighted. All arrangement adopted for such lighting shall be to the satisfaction of the Engineer's Representative.

Clause 34.2

Rates of Wages and Conditions of Labour

The Contractor shall pay rates of' wages and observe conditions of labour not less favorable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favorable than the general level of wages and

conditions observed by other employers whose general circumstances in the trade or in industry in which the Contractor is engaged are similar.

Clause 34.4

Housing for Labour

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract, these facilities shall be handed over to the Employer or if the Employer so desires, the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of the Engineer.

Clause SS-26

Safety Precautions

The Contractor shall adequately provide for the safety, health and welfare of persons and for the prevention of damage to works, material, and equipment for the purpose of or in connection with the Contract.

Clause 76.1

Liability of Contractor

The Contractor or his Subcontractors or assigns shall follow strictly, all relevant labour laws including the Workmen's Compensation Act and the Employer shall be fully indemnified for all claims, damages etc. arising out of any dispute between the Contractor, his Subcontractors or assigns and the labour employed by them.

2. Government of Punjab

CLAUSE - 32

Application of labour laws and rules

The contractor shall employ labour, provide all facilities and pay wages to his work people or employees in accordance with the labour laws or enactments relating thereto and rules framed there under, enforce from time to time.

CLAUSE - 33

Contractor liable for payment of compensation to injured workman or in case of death to his relations

- In every case in which by virtue of the provision of Section 12, sub section (1) of the Workman's Compensation Act 1923 Government is obliged to pay compensation to a workman employed by the contractor in execution of the work. Government will recover from the contractor the amount of the compensation so paid and without prejudice to the rights of the Government under section 12, sub section (2) of the said Act. Government shall be at liberty to recover such amount or any part thereof, by deducting it from the security deposit or from any sum due by Government to the contractor, whether under the contractor or otherwise.
- Government shall not be bound to contest any claim made against under section 12, sub section(1) of the said Act, except on the written request of the contractor and upon his giving to the Government full security for all costs for which Government right become liable in consequence of contesting such claims.

3. KPK-Contract agreement

Contractors' liabilities:

Clause 31

a. No labour below the age of 12 years shall be employed.

b. The contractor will pay to workmen not less than 50% of the daily wages of his class as shown in schedule D on page 22, whether employed in piece work or otherwise of any day that he is employed on the work or for any day that he is idle through no fault of his own.

c. The contractor will maintain on the work during working hours Master Roll which will be entered in ink the following particulars in respect of all workmen employed on the work:-
   - Name of each workmen.
   - Fathers name
   - Amount of his daily wages

d. When payment is made or the fact will be recorded in the Master roll taking the workman

e. Signature thumb impression against the amount paid. Thumb impression should be attested by the person making payment.

f. If a report is made to the Engineer in Charge that a workman is paid at a rate less than the amount due to him under sub clause (a) of this clause he shall after such hearing the

contractor and two workmen and of or working such further enquiry may deem fix fair amount or wages due to the workman and his decision shall be final.

g. If the contractor fails to pay the workman at the rate determined by the Engineer in charge he should be deemed to have violated his contract and it shall be open to the Engineer in charge to deduct from the amount due to the contractor and sum thus payable to the workman or concerned and pay the same to him or them

h. Persistent failure on the part of contractor to pay fair wages to the labour employed by him shall be deemed to be sufficient ground for his contractor being rescinded.

i. Only Khyber Pakhtunkhwa labour where it is available shall be employed unless the Divisional Officer certifies that in the case of certain works, local labour is not sufficiently skilled for the work.

Clause 36

Amenities for Labour to be Provided by the Contractor

The Contractor will provide at his own expense the following amenities for all labour employed on the work:

i. An abundant and potable supply of water
ii. Latrines@2% of the labour force
iii. Sweeper @1/2 % of the labour force
iv. An incinerator

The Contractor will provide at his own expense the following amenities for labour who do not return to their houses at night:

i. An abundant potable supply of water
ii. Latrine @ 6% of the strength of such labour
iii. An incinerator
iv. Sweeper@ 1%
v. Hutting @ 20 square feet of floor space and 400 cubic feet of air space @30 square feet of floor per labourer
vi. Covered cooking shed at 3 square feet per labourer.
vii. Washing cubical at 1 cubical @ labourers with soakage pits to dispose of the sullage water
viii. A good shop selling food grains, sugar, salt and other necessities at the rate prevalent at district. The rates being written up clearly in English and Urdu outside the shop. This will be open to inspection by the Engineer-in-Charge who will examine the quality of food on sale and order the removal of food which in his Sole discretion he considers fit.

Clause 37.

- No compensation payable for idle labour

- The C&W department will provide at Government expenses, the following amenities:
    i. All necessary medical facilities, medicines and appliances.
    ii. Anti-malarial measures wherein the opinion of the medical authorities, such measures are necessary.
    iii. Such other amenities as may seem necessary to the Engineer-in-Charge