Guidelines for optimizing local employment in infrastructure reconstruction and development programmes in Iraq

International Labour Organization

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Abbreviations

EIIP	Employment Intensive Investment Programme
ESCWA	United Nations Economic and Social Commission for West Asia
GEC	Governance in Support of Employment Creation (UNDG Project)
GIS	Geographic Information System
HABITAT	United Nations Centre for Human Settlements
ILO	International Labour Organization
IOM	International Office for Migration
IRFFI	Iraq Reconstruction Fund
MOE	Ministry of Education
MOLSA	Ministry of Labour and Social Affairs
MOPDC	Ministry of Planning and Development Cooperation
MFI	Micro Finance Institution
NaSIEP	National Sustainable Infrastructure and Employment Programme
NIMBEC	National Inter-Ministerial Board on Employment Creation
PCO	Iraq Project and Contracting Office
SME	Small and Medium Enterprise
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNDG	United Nations Development Group
UXO	Unexploded Ordnance
WB	World Bank

Definitions

"*appropriate technology*" (AT) is technology whose risk/cost/quality/value and trade off is such as to justify its continued use;

"*employment-intensive*"(EI) is a generic expression to describe strategies, programmes, projects, activities and assets which will promote direct or indirect, short-term or long-term employment generation at the highest possible level;

"*equipment-based (EB) technology*" is a technology where most work is done by labour-replacing equipment, supported by a small labour force – generally effective where labour is not readily available or where labour costs exceed US$ 6 per day;

"*modified-equipment-based (MEB) technology*" is a technology whereby conventional equipment-based works have specifically selected elements of their operations specified and undertaken using labour-based equipment supported or labour-intensive methods;

"*labour-intensive" (LI) technology*" describes a technology where labour, supported usually by hand-tools only, is used as a cost effective method (when compared with equipment-based methods) of providing or maintaining a technically restricted range of infrastructure to a specified standard;

"*labour-based equipment supported equipment supported (LBES) technology"* describes technology in which labour, supported by equipment (light or medium-sized) is used as a cost effective method (when compared with equipment-based methods) of providing or maintaining a technically defined range of infrastructure works to a specified standard. Sometimes also referred to an Intermediate technology;

"*public works"* (PW) are investments in works sponsored/financed/owned by central or local government agencies for the benefit of the population in general; the infrastructure created remaining in the charge and ownership of the agencies concerned, which usually assume responsibility for its operation, management and maintenance;

"*community based works*"(CBW) are investments in works sponsored/financed/owned and undertaken by clearly identifiable groups of local people (usually with the help of a facilitating agency) for the benefit of the community as a whole, the assets created being owned, managed, used and maintained by the beneficiaries themselves;

"*local level planning*"(LLP) is a locally-based planning system, implemented through local authorities and generally based on decentralized decision making and the use of local participation in defining the community's needs (such as community-based works) and priorities;

"*a job"* is defined as equivalent full-time employment or in effect 200 days work per annum, paid at the market rate or not less than the minimum wage;

"*procurement"* is the process which creates, manages and fulfils contracts;

"targeted procurement" (TP) is a contractual system which incorporates social targets as well as financial targets, which are set to meet certain policy objectives such as poverty alleviation, employment, geographical focusing and the wider use of local materials and services;

"*technology*" is the skill and knowledge of using labour, materials, tools and equipment to undertake tasks efficiently;

Table of Contents

Chapters Page

Annexes

Chapter 1

Introduction

Factors influencing technology choices.

It is useful to start with a definition of *technology*. In the context of these guidelines technology is "*the skill and knowledge of using labour, materials, tools and equipment to undertake tasks efficiently*".

There are many factors influencing the choice of technology and some of these, especially those at policy level, are often beyond the day to day reach of the engineer and designer responsible for the development of an infrastructure programme. These key influences are economic as well as technical, political, social, environmental and other influences where there are enough concerns so as to generate a lobby group to influence the technology decision making process.

There is understandably a great *interdependency* between all of these factors in both the short term and the long term and this is sometimes referred to the *equilibrium or balance* between these factors. The comparative weighting given to one factor over another undoubtedly results in not only how a particular infrastructure project is undertaken but often also in who actually undertakes the work.

These guidelines assume that there will be open debate at Government level on the issue of technology choice so that the massive reconstruction programme is rightfully set in the context of an infrastructure and employment/poverty reduction policy and programme and that all key factors involved in deciding on a particular technology are able to be considered in a well balanced, transparent and rational manner and in the national interest.

What are the technology choices?

When it comes to infrastructure (re)construction, operation and maintenance, the choice of technology in the context of these guidelines, is between the following *four basic types*:

- **Equipment-based (EB) (conventional-low labour content)**
- **Modified equipment-based (MEB) (conventional/ LBES-LI mix)**
- **Labour-based, equipment-supported (LBES) (labour and medium sized equipment)**
- **Labour-intensive (LI) (labour and hand-tools only)**

Each of these four types of technology referred to above has its *natural* place in every economy (depending on labour cost and availability and the technical specification for the work involved) and while each category listed uses increasingly higher percentages of labour in its operation, each is usually technically restricted to particular categories of infrastructure works and may not be appropriate in other categories if unable to achieve minimum technical standards or other efficiencies.

This is where the natural equilibrium of all of the key influences affects both the efficacy of the individual technology and the relative merit of that technology over another when the selection of the particular infrastructure type and location is made. Never the less, the selection of one technology over another does not imply the use of inferior or less sophisticated engineering design or management methods which themselves should remain technology neutral.

These guidelines recognize the importance of the *optimization of job creation under "decent working' conditions* as one of the major factors of sustainable infrastructure reconstruction programmes, however depending on the technical requirements of the particular infrastructure, more labour or less labour, or the selection of one of the four technology types listed above over another, will be dependent on the particular materials involved, the timelines of the work, the specified technical standards and therefore the need for more or less of certain types of essential equipment or labour and the possible need for reconsidering the basic design approach .

As economies change, so to will be the range of sustainable employment options as a result of new skills needs and higher labour costs. As such the technology equilibrium or balance factors may also shift and possibly result in the justification for changes in the *choice of technology* for a sector of the economy to maintain local and regional competitiveness.

The current situation of the economy in Iraq is such that there is massive unemployment and unskilled labour is available at a relatively low cost. The choice of a labour-absorbing and efficient technology for a significant part of the huge infrastructure works programmes therefore makes a great deal of sense.

Unfortunately, however, there is an insufficient appreciation of the need for *technology choice* at the present time in Iraq, with much of the infrastructure work being undertaken without incorporating the concept of *most appropriat*e *technology*; or *technology balance*, there being a major preference for heavy equipment (and therefore low labour content) techniques based on the typical industry technical standards more applicable in developed countries. This can be seen in ***Annex A*** which summarizes the findings of the technology assessment of selected projects in Iraq during late 2004.

Understandably there is an overriding need to take into account the practicalities of site safety and security for the workers involved in all construction works in Iraq and this is one reason cited for the current preference of equipment-based work methods, however the peace dividend in all countries emerging from conflict is the expectation of new and improved opportunities for employment and livelihoods and without these peace and stability cannot take root.

Clearly the current infrastructure construction techniques will need to be made more *employment friendly* in Iraq in the context of moving towards better *technology balance* and the speed and extent of that will depend on the commitment made to place employment creation as a higher order issue, rather than for it to be left to "just happens by itself" when the investments are made.

Chapter 2

Where the jobs potentials are

The technology options

Reference is made to the *Schedule of Definitions* made at the front of these Guidelines as it is particularly important to understand the differences between *four basic technologies* referred to in these guidelines. Each of these technologies has its place in Iraq in the infrastructure works programmes but each should only be utilized under the conditions appropriate for its use.

The following Table identifies the typical percentage of labour content per technology type chosen however these percentages are very sensitive to wage rates and the essential non-labour content of the works involved.

Technology	Abbreviation	Typical project labour content[1]
Equipment-based (conventional)	**(EB)**	**5% <15%**
Modified-equipment-based	**(MEB)**	**<30%**
Labour-based, equipment-supported	**(LBES)**	**<40%**
Labour-intensive	**(LI)**	**<80%**

While in any workplace there should be a combination of EB, MEB, LBES and LI work methods, the need for technology options and technology mixes as well as the distinction between the approaches is probably most important when conceptualizing and creating new programmes and in reshaping existing programmes.

While it is preferable to retain technology mixes in infrastructure sector programmes, rather than separate out certain parts of the sector work exclusively for one technology or another it is also possible to design separate LI and LBES programmes for rapid infrastructure and employment creation simply by specifying suitable types of works and the sectors in which they could be included.

These works would need to be able to be undertaken in a technically sound manner and be cost competitive when compared with conventional equipment-based approaches. LI and LBES work methods are particularly appropriate for the Cash for

[1] This percentage can vary widely according to the wage and productivity levels and therefore the number of workers involved per category.

Work or *social protection* schemes that will continue to be needed in Iraq for some considerable time.

In addition to specifically designed LI and LBES programmes, rapid and hyet significant improvements can be made to existing equipment-based (EB) works by simply "*tweaking*" the existing specification to enable some of the works activities to be done with *"more labour and less equipment"* or by MEB methods. There appears to be enormous potential for this approach in Iraq.

While jobs potentials in any project need first of all to be looked at from both the direct employment and the indirect employment likely to be created by the investment even through a conventional approach, the real optimization of the employment potentials is achieved by selection of the most appropriate technology for the particular work in hand and where there can be added job value both during the construction and operation as well as for the maintenance of the completed infrastructure.

Equipment-based (EB) works will still continue to play an important role in any post-conflict reconstruction programme and certain very large and heavy duty infrastructure works will clearly need to continue to be undertaken using this method.

The real challenge will be to identify which of the EB works or works components can be competitively undertaken using more *job-enhanced* MEB, LBES or LI methods without seriously disrupting the delivery and timelines of the overall rehabilitation and reconstruction programmes.

In all cases, irrespective of the technology chosen, 'decent' working conditions are assumed as a common element and in no way should LBES or LI approaches be considered to be a cheaper option because of the poorer working conditions permissible on those work sites. ***Annex B*** to these guidelines provides for model labour clauses applicable to all technology options.

The difference that choice of technology and building materials can make.

The importance of using appropriate designs and materials for all works and activities' menus which follow in the tables below cannot be overstated. Good design practice involves the adoption of *life cycle costs* concepts in making design and investment decisions and in optimizing the use of local resources in the works.

This means being fully cognizant of all of the viable technical and environmentally sound options and benefits involving locally available *'long-life'* building materials and building products and in addressing issues such as the use of cement stabilized blocks over kiln fired clay bricks in the construction sector and the

incorporation of durable and sustainable road surfacing options[2] rather than cheaper *'short-life'* options.

The wise use of relevant and appropriate design methods and approaches is indeed inextricably linked to the final selection of building materials, the final selection of one technology over another and ultimately in advancing labour-based approaches as a means of poverty reduction.

The Table below, based on the experience in most of these sectors in South Africa and Indonesia compares the typical labour content percentage in selected infrastructure works sub-sectors when using either conventional equipment-based work methods or when there is a shift to more *labour-friendly* work methods wherein productive labour is substituted for selected items of equipment.

As can be clearly seen from the Table which follows, the major potentials for employment creation lie in choosing LBES/LI approaches rather than EB approaches, where it is found to be technically appropriate, for the rural and secondary roads programmes as well for irrigation, forestry and small dams construction. While additional employment can also be created in the other sectors listed the additional number of jobs is not as significant, as the major cost components of these works are found in the special materials and essential and often specialist equipment costs.

Never the less, in any national programme established to address the challenges of employment creation, all sectors need to be included and the work involved should be specified in a manner so as to optimise employment and SME opportunities

Table showing infrastructure sectors with *comparatively high materials components* in their costs.

Sub-sector	Labour content % Using EB methods	Labour content % using LBES/LI methods
Water/sanitation	**<15%**	**25 - 35%**
Electrification	**<15%**	**35 – 45%**
Secondary roads/Dams	**<15%**	**30 – 70%**

There are also sectors where the materials costs component in their development are not as great as for example the water, energy and main roads sectors and which are therefore by virtue of the nature and intricacy of the hand-work involved more labour absorbing. Examples of these sectors are shown below.

[2] See *Paving the way for rural development and poverty reduction* , Gourley, Greening, Jones and Petts, ASEAN federation of Engineering Organisations, 2002; *Low Cost Road Surfacing Project working papers, 1 to 22* , TRL and Intech Associates, 2002 and 2005

Table showing infrastructure sectors with *comparatively low materials components* (and relatively higher labour content) in their costs.

Sub-sector	Labour content % Using EB methods	Labour content % using LI/LBES methods
Irrigation	**<25%**	**30 – 70%**
Forestry	**<25%**	**40 – 70%**

The building sector

The building sector is seen by many as already having a significant labour content due to the range of skills needed in the industry and the relative difficulty with the automation of the building process which varies from site to site. There is however increasing automation of the production of building materials and products and it is in this area that additional job creation will be possible in Iraq if there is to be creative design approaches which utilize more local materials and processed materials in their programmes. In many cases this will require basic design changes to make this happen as there is a significant dependence on imported building materials at the present time.

The ILO and HABITAT have collaborated closely in a number of countries and have produced a joint keynote publication[3] which highlights the importance of shelter and employment generation which is a useful reference document for the Iraq reconstruction programme.

With a concerted effort to efficiently increase employment opportunities in the building sector in Iraq it will be quite possible to raise the current 25% labour content in shelter projects by as much as 50%.

Model job creation approaches and infrastructure works menus

In choosing a particular technology one must first of all recognize that the LI and LBES categories have natural technical boundaries or limitations established by the constraints of human strength and the tools and equipment associated with these programmes. While there should be no compromise made in the attainment of specified minimum technical standards or the quality of the works involved neither should the natural boundaries of viability of these technologies be overburdened.

Likewise costs should be comparable with alternative EB or MEB methods and there should also be a vision of what lies beyond the immediate programme in terms of the need to create sustainable jobs using a chosen technology for the operation and maintenance of that completed infrastructure.

[3] Shelter provision and employment generation, 1997, ISBN 92-2-108523-6

As a general guide the following model approaches and menus of works are likely to be suitable for application in Iraq however they will all need to be further refined and modified as more experience is gained with the various categories of works.

Model approach for MEB Mechanical and Electrical works

(Suitable for specific components of a wide range of community and public infrastructure works)

Mechanical and electrical works	
Area	**Approach**
Contract documentation	Review each item in the Bill of quantities with view to import substitution[4]
Manufactured building, electrical and mechanical materials, fixtures and fittings	Give preference to locally manufactured goods and materials with (where necessary) reasonable adjustment to the basic technical specifications to accommodate any foreseen difficulties with technical standards and costs. Specify labour-based equipment supported methods as being preferred for all trenching operations
Water and Power reticulation	Specify labour-based equipment-supported methods as being preferred for all trenching operations

Model approach for MEB Civil and Building works

(Suitable for specific components of a wide range of community and public infrastructure works)

Civil and building works	
Area	**Approach**
Contract documentation	Review all contract items and minimize use of imported materials, and substitute labour for equipment where technically and financially viable.
Site Clearing excavation and earthworks	Specify labour-based equipment supported methods wherever feasible
Concrete works	Specify greater use of small or medium sized mobile rock crusher plant for on-site aggregate production. Specify hand-feeding of mobile concrete mixers
Precast concrete elements	Specify in-situ production for building components and kerbs
Retaining structures	Specify the use of gabions hand-packed with local stones wherever feasible.
Building materials	Investigate use of local materials and production of local

[4] Substitution of imported materials, products, tools and equipment should be a significant part of the national Employment Policy and project managers should promote local SMEs wherever opportunities arise to produce locally made cost and quality competitive products needed for the reconstruction programme.

	building products using SMEs.
Dressed stone	Adjust specifications so that actual local sources may be utilized
Road subgrades	Specify greater use of lime/cement stabilization of sub-grade materials in sandy soils to reduce the design depth (and cost) of imported base course
Road surfacing	Explore all viable and durable options including appropriate alternatives to imported bituminous surfacing such as locally produced dressed or interlocking stone or concrete block paving blocks.
Culverts	Specify in-situ fabrication of box culverts or concrete pipes.
Rip-rap works	Use stone grouted protection works wherever there is an abundance of locally available stone

An example of how a Schedule of quantities in an EB civil engineering contract may be notated so as to identify which works should be undertaken using EB or LB/LI methods is included in ***Annex C.***

Menu of types of infrastructure for LBES work methods.

(For both community and public infrastructure works but in technically restricted categories)

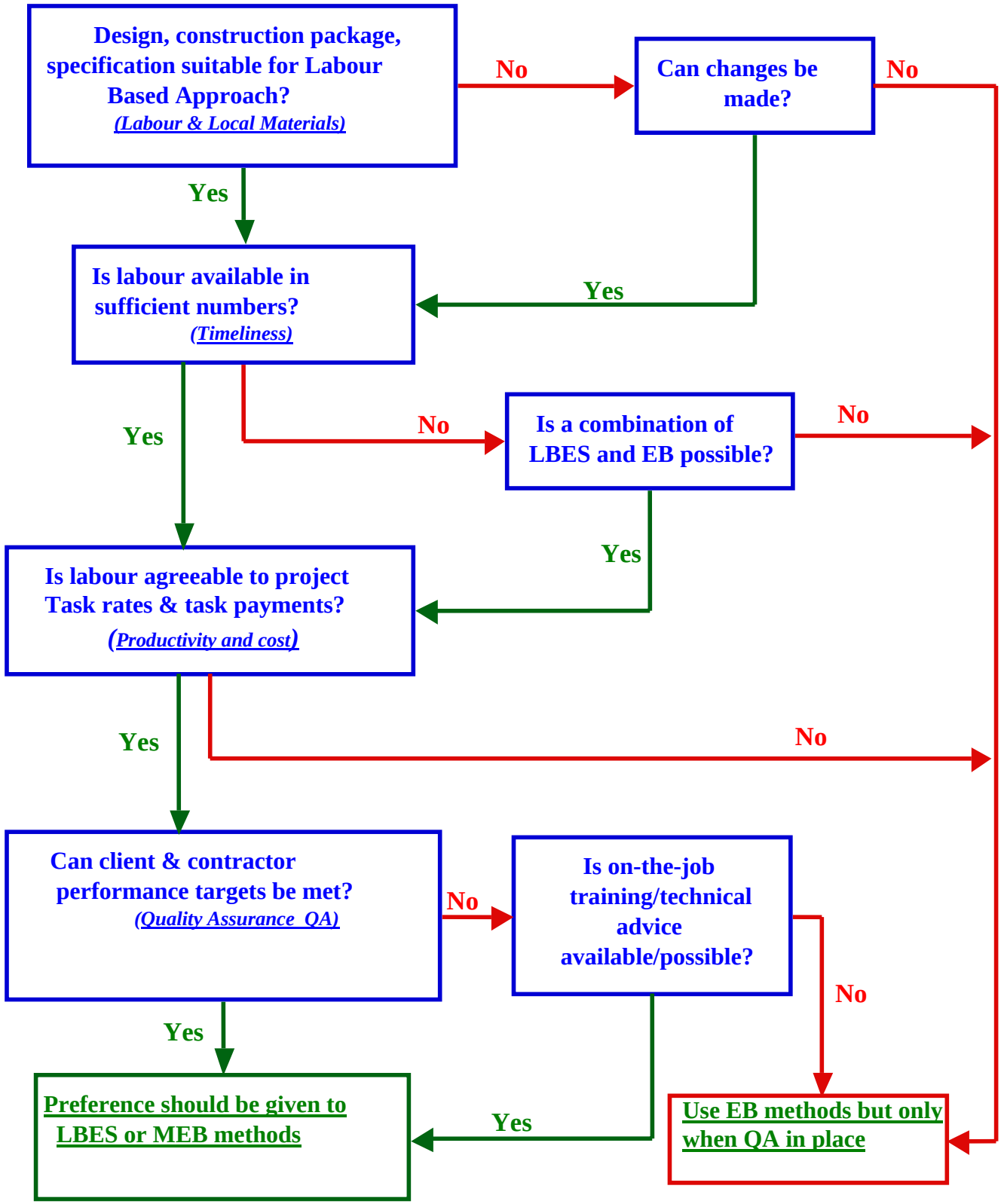
Infrastructure Type	***(Re)construction and maintenance contracts***
Social infrastructure	*Schools, hospitals and health-care centres*
Economic infrastructure	*Markets, workshops, commercial and industrial buildings*
Human settlements	*Low cost housing and land development sites*
Public and community facilities	*Places of worship, markets, car-parking areas, workshops and public and community owned commercial establishments, playing fields, cemeteries, parks and gardens*
Sanitation	*Sanitation systems and septic tank construction and cleaning*
Water and irrigation	*Small to medium sized dams and water control structures; river training. Secondary canal construction and maintenance*
Roads	*Secondary and tertiary roads rehabilitation and maintenance and components of major roads work, pavement construction, bitumen surfacing and slurry treatments*
Railways	*Rebuilding of subgrade and installation of ballast*
Sea, river and air ports	*Rehabilitation and maintenance of earth and sea retaining structures incorporating local materials.*

Menu of types of infrastructure/activities for LI work methods.

(For community and public "Cash For Work" infrastructure works and assistance in restricted categories)

Infrastructure Type	***(Re)construction and maintenance activities***
Debris and land clearing	*Removal of building rubble, recycling of essential building materials, general clearing and opening up of basic access-ways and agricultural land*
Natural resource management/rehabilitation	*Foreshore and riverbank rehabilitation Agricultural land reclamation, horticulture, nursery (re)establishment, agro-forestry, forestation and silviculture*
Watershed protection, soil conservation and environmental protection works	*Vegetative/shrub barriers in contours trenching, in-situ moisture conservation, stream bank protection, drainage works, gully checking/stabilization, flood protection.*
Land and sea, river retaining walls and terracing	*Building and rebuilding of local stone retaining structures*
Drainage and irrigation	*Cleaning out of existing drainage and tertiary irrigation systems as well as (re)construction and maintenance, dewatering works.*
Roads and street works	*Clearing and temporary repair of streets, street furniture, market places and sidewalks as well as drainage works, through short haul earthworks, grubbing, hand-compaction, greening works and routine maintenance, road marking*
Solid waste management	*Street cleaning, waste collection, processing, recycling and disposal*
Water collection and storage systems	*Wells and water tanks cleaning and rehabilitation, fish pond cleaning and rehabilitation, protection of water intakes*
Recreational, cultural, archeological and historic sites rehabilitation	*Site clearing, restoration works, national and community parks cleanup, trail construction and maintenance, painting.*
Sports fields and playgrounds	*Redevelopment and maintenance, fencing*
Small-scale mining	*Excavation and tunneling. Quarrying, breaking and screening of rock*

Choosing between LBES and EB work methods



Chapter 3

Towards a National Sustainable Infrastructure and Employment Programme (NaSIEP)

Step by step towards a National Sustainable Infrastructure and Employment Programme (NaSIEP)

To realize the NaSIEP vision, there are 3 basic steps involved. These require the development of an appropriate institutional setting, the realization of an enabling environment, technical support being effective, local capacities having been developed and effective management mechanisms in place and working well.

The 3 basic steps in the process for the delivery of the NaSIEP are:

STEP 1 **The *commissioning of the National Inter-Ministerial Board on Employment Creation, (NIMBEC).***

STEP 2 ***A national awareness raising campaign for the NaSIEP***

STEP 3 ***The implementation of the NaSIEP through:***

- ***A*** ***Policy options developed and formalized*** (within the framework of the overall programme of the NIMBEC)
- ***B*** Basic ***capacity building and human development programme delivered*** (for both public and private sector stakeholders)
- ***C*** A NIMBEC ***Management Information System (MIS) made operational***.
- ***D*** The ***enabling environment established*** *(f*or realizing technology balance)

Steps 1 and 2 can be found in Annex D as they relate to the essential work of the NIMBEC being established under the UNDG project.

The outline and Checklists for Step 3 follow and cover the main issues and actions involved in the delivery of the NaSIEP. These steps and processes will of course need further refinement and the adoption by the NIMBEC as the national programme moves ahead.

STEP 3; The implementation of the NaSIEP

A. Policy options developed and formalized

While the NIMBEC will be mandated to address broad national macro economic and employment and social protection issues, the NaSIEP will be but part of that work; albeit a major part.

The specialist technical team supporting the NaSIEP will need to address both the immediate and medium term concerns of the infrastructure and employment programme and shape that work within the context of macro economic, employment, social protection, investment and human resources development policies being developed by other specialists both inside and outside of the NIMBEC PMU.

Particularly relevant will be work related to the emergence of a viable private sector able to access contract work associated with the reconstruction programmes, (rather than sub-contract work only), the fostering of local employment and entrepreneurship, greater use of local resources and the greater localization of the management of major contracts involved in the reconstruction works.

It is envisaged that a separate stand-alone contractor development and SME development programme will need to be operational right from start of the NaSIEP s it is already known that the rapid development of this sector is urgently needed.

It is expected that the essential policy reforms will quickly result in a greater share of reconstruction contracts going to Iraqi contractors and SMEs and in providing more jobs for local workers as the private sector begins to play a larger role in the Iraqi economy as soon as local capacities have been strengthened and expanded.

Checklist of policy questions and concerns to be addressed.

	Policy concerns checklist	
1	How is NaSIEP provided for within national economic, employment and social protection policies and strategies and the National Development Plan?	☐
2	Are any infrastructure Ministries not obligated to optimise employment creation in the reconstruction programme through setting and monitoring job targets?	☐
3	How do the transparency and accountability provisions for the NaSIEP meet the minimum requirements of the UNDG –World Bank Trust Fund?	☐
4	How quickly is the Government to remove any bottlenecks in current legal or administrative procedures so as to allow for the immediate and wider use of MEB, LBES and LI work methods?	☐
5	How is an appropriate participatory planning process to be involved in the selection and prioritization of local and national infrastructure works and also linked to top down decisions regarding infrastructure?	☐
6	How are the views of participatory planning participants to be taken into account?	☐
7	How is the notion of *technology balance* to be recognised in national infrastructure policies	☐
8	How can the infrastructure works been designed in a more sustainable manner?	☐
9	How is the NaSIEP formally recognised as an important instrument within national employment, social protection, poverty reduction and investment policies?	☐
10	How and when are the technical training requirements for NaSIEP public and private sector stakeholders to be incorporated into national skills development policies?	☐
11	How and when are labour-based equipment supported technologies to be incorporated into the University and technical college curricula for engineers, architects and planners?	☐
12	How are preferences to be provided for employment-enhancing technologies?	☐

13	How will incentives be provided for use of employment-enhancing technologies?	☐
14	How are the principles of the ILO "Decent work" approaches endorsed by national policy?	☐
15	Which local and regional labour productivity technical norms have been utilised as a base reference for the Iraq Labour productivity technical norms?	☐
16	Have all the important social partners endorsed the labour productivity technical norms?	☐
17	How are productivity-based remuneration systems for unskilled and skilled labour to be incorporated into national employment policy?	☐
18	How are the migrant labour policies being adopted after providing for optimal employment for all Iraqis?	☐
19	How and what incentives are being provided for the rapid development and operation of the private sector in the infrastructure reconstruction programmes?	☐
20	How is support to be provided for essential research and development relating to the whole range of technologies able to be utilized in infrastructure programmes?	☐

B. Basic capacity building and human resource development programme delivered (for both public and private sector stakeholders)

This component will require a substantial budget and the earliest possible rapid assessment of skills needs in both the public and private sector and the rapid delivery of basic skills needed for managers, engineers, planners and other specialists, technicians, supervisors, communities, consultants, contractors and workers needed for the delivery of NaSIEP. This will need to be undertaken infrastructure sector by infrastructure sector, community by community and training provider by training provider.

It is envisaged that technical training would be delivered through the adoption of a *training of trainers* approach so that both public and private training providers could rapidly accelerate the skills development programmes

The PMU will be expected to maintain a full technical library of key documentation relating to MEB, LBES and LI technologies and make as much of this as is possible available also on the NaSIEP web site.

Estimated number of personnel requiring technical training in LBES methods

It is anticipated that short-term training would be needed for some 9000 personnel for the efficient management of a workforce of 100,000 involved entirely on labour-based equipment supported (LBES) or labour-intensive (LI) civil (re)construction works activities. Less of course would be involved for MEB works. The table which follows shows the ratio of engineers, technicians, superintendents, subcontractors and foremen needed for a workforce of 100,000 however NIMBEC will need to decide on the total number of targeted workers after having reviewed the combined work-plans of the NIMEC member Ministries and having decided on what are the most practical arrangements for the choice of technology for these works in the initial 12 months.

Estimate of numbers of personnel to be trained in labour-based equipment supported technology

Position	Ratio of personnel to unskilled labour	Personnel required for 10,000 unskilled labourers	Numbers of trained personnel required for 100,000 workforce	
Engineers	1:500	10,000/500 = 20	200	☐
Technicians	1:100	10,000/100 = 100	1,000	☐
Superintendents	1:100	10,000/100 = 100	1,000	☐
Sub-contractors	1:50	10,000/50 = 200	2,000	☐
Foremen	1:20	10,000/20 = 500	5,000	☐
Total			9,200	

It is expected that the rehabilitation of vocational training institutions will be undertaken by others and assumed that there will be an expansion of private sector training providers.

The initial technical training to be provided for engineers, technicians and supervisors (public and private sectors) can be drawn from already available ILO technical training packages. The initial training would involve no more than 3 days training for engineers and technicians and 3 weeks for supervisors where equal opportunity would be given for male and female participants; recognising that female workers often prefer to have female supervisors.

More detailed technical training will be able to be delivered once the programme is under way. This will combine 'on-the job" training with more in-depth training regarding technical aspects of infrastructure specifications, labour productivity, labour management and quality assurance.

Interim technical manuals based on relevant models for those available in the region will be adapted in the first instance while Iraq specific manuals are under preparation.

Checklist of issues and actions involved in capacity building sub-component.

This checklist would be effective following the decisions of the NIMBEC after its review of the combined infrastructure Ministries work-plans and on the agreed technologies they will use for their first year programme.

	Capacity building issues and actions checklist	
1	Define relevant and viable policies and strategies for the NaSIEP capacity building component in the context of the national skills development programme and budget.	☐
2	Determine whether a provision for the construction industry training and skills development will be automatically built into major contracts (>USD1m) or levied from such contracts	☐
3	Define National Technical Standards for the professional, technical and supervisory qualifications needed for personnel involved in the delivery of the NaSIEP.	☐
4	Define the ratios of the various levels of technical and professional categories (public and private sector) needed for the delivery of typical contracts in the various sectors and via the alternative technologies.	☐
5	Define National Technical Standards and specifications (in some cases possibly interim) for adoption for EB, MEB, LBES and LI infrastructure works?	☐
6	Prepare timetable for the release of interim and final technical implementation manuals, guidance notes and pro-forma documentation for the implementation of the NaSIEP.	☐
7	Maintain an updated schedule of reforms being made for the realization of technology balance (legal, procurement, administrative and technical procedure reforms)	☐
8	Define National Technical standards for Technical and Entrepreneurship Training Providers (in some cases possibly interim).	☐
9	Undertake Rapid Competency Assessments of Technical and Entrepreneurship training providers and programmes (formal and informal).	☐
10	Undertake Rapid Needs Assessments of available Training providers able to deliver short-term intensive skills courses addressing known skills gaps.	☐

11	Develop an action plan to thoroughly analyse data from the regular Labour-market and business opportunity surveys undertaken by MOLSA, the Bureau of Statistics and others, and supplemented as necessary by the NaSIEP.	☐
12	Develop a comprehensive overall structured training plan (for all stakeholders) for the delivery of NaSIEP.	☐
13	Initiate *Training Of Trainers* courses for both the public and private sector (consultants as well as contractors) as well as communities in key areas of skills shortages, Start and Improve your Business (ILO), Start Your Construction Business (ILO) and specialist technical courses on labour-based, equipment-supported technologies.	☐
14	Develop and regularly update the NaSIEP web site with technical information needed on the technology options as well as lists of certified training providers, training courses available, information on enterprise development, access to finance for new or expanding enterprises and basic minimum qualifications need for participation in the reconstruction programmes.	☐
15	Set up model demonstration projects for 'on-job" training purposes and establish industry best practices for the whole range of technologies to be utilized in the NaSIEP.	☐
16	Introduce ILO Labour–based technology curricula materials into selected technical colleges and Universities	☐

C. ***Management Information System (MIS) for NaSIEP made operational.***

The establishment of an effective Management Information System (MIS) will be crucial to the proper management of the NaSIEP. Whereas individual Ministries already have their own systems, it will be important to link these in a manner which is usually gathers more than just basic data (project name, budget, commitment, general progress, expenditure to date) that is usually all that is needed for the Ministries of Planning and Finance.

Whereas individual technical Ministries must continue to monitor their own technical programmes as they see fit, it will now be necessary, for them to now incorporate technology classifications (EB, MEB, LBES or LI) into each individual contract or project and to set job creation targets for each contract/project. In addition contractors will be required to monitor jobs delivered along with the infrastructure work, through a simple statement provided with each progress payment claim. This statement needs to be developed but could include the names of the workers, home district (to check if local or imported labour), hrs/days worked, amount paid, skills, sex of the worker and whether any training has been provided to the worker.

The MIS will then need to be able to track the jobs created for each project in each technical Ministry and to also monitor the progress being made with the enabling environment for the further widening of the use of more labour-enhancing work methods as local technical and contracting capacities expand and as the reforms of the contract procurement systems become operative.

Very important will be the ability of the MIS to be able to track the levels of transparency in project delivery and any possible interference with the attainment of technology balance for the MEB, LBES and LI works.

The MIS will also be expected to operate at national and local level and be able to access data on those "beneficiaries" working on temporary works schemes as part of the government's social protection programmes involving cash for work and temporary employment only. These programmes would likely be under the control of several key ministries involved in agriculture and rural and urban development and the monitoring of these programmes and key poverty indicators will enable impact assessments of the overall NaSIEP and other relevant programmes.

The MIS team should also have the ability and mandate to be able to spot check the quality of the works being undertaken and to closely monitor the relative performances of the various technologies undertaking similar work.

Checklist of the key data to be incorporated in the MIS.

Key baseline data to be developed and project information to be captured the NaSIEP Management Information System		
	(1) Basic construction industry key indicators and costs & availability of labour, materials and equipment	
1	Tracking and updating of basic *labour-market data* and information available from Employment Services Centres of MOLSA	☐
2	Tracking and updating of *Poverty mapping* work by others	☐
3	Tracking of *materials and equipment* price indices	☐
4	Tracking of data on progress with *import substitution* of construction materials and equipment	☐
5	Tracking of *labour costs* and *employment conditions* relating to the construction sector	☐
6	Maintaining a data base of registered and unregistered civil, mechanical and electrical *contractors* (local and foreign) and their mentorship arrangements or partnerships	☐
7	Maintaining a data base of registered and unregistered *suppliers of construction materials and equipment* (local and foreign)	☐
8	Assessing likely impact of reported *shortages of construction materials, equipment and skills*	☐
9	Undertaking regular assessments of needs and justification for *use of foreign contractors and suppliers* over local alternatives or potentials	☐
10	Determining actual *labour-availability* by province and by month especially during peal agricultural periods.	☐
11	Analysing the base line *labour/equipment/materials costs splits* for a range of basic infrastructure types (EB, MEB, LBES, LI) of various magnitudes	☐
(2) Skills needs and skills development		
1	Maintaining and regularly updating a data base of *skills needs* for the implementation of the NaSIEP	☐
2	Maintaining regular *liaison with the industry training boards* and technical colleges and universities on needs for any technology and technical specification change.	☐

3	Tracking of national *skills development programmes* and their outputs relating to the construction sector	☐
4	Tracking of skills *needs assessment and business opportunity* surveys relevant to the NaSIEP.	☐
5	Tracking of *National Technical standards* relating to technical education and training and training providers	☐
6	Tracking of numbers and competencies of *vocational training institutions, business services providers, banks* and *MFIs* (private and public)	☐
7	Tracking of *matching of training provided* with skills needed for the NaSIEP.	☐
(3) Progress with institutional reforms for the creation of the enabling environment for the NaSIEP		
1	Tracking of *institutional reforms* including contract and contractor classification, the unbundling and repackaging of large contracts, reforms to the construction laws and administrative hurdles, numbers and categories of jobs being documented routinely in contract progress claims, increases in the involvement of local contractors.,	☐
2	Tracking of *indicators of transparency* and accountability and the level of interference with the attainment of equilibrium necessary for the selection of MEB, LBES and LI technologies.	☐
3	Monitoring of the effectiveness of the *geographical and poverty targeting of the NaSIEP* and the attention given to specific vulnerable groups seeking employment and training	☐
(4) Overall performance of the NaSIEP and the quality of the works, classification of works into most appropriate technology categories and numbers of jobs being created per infrastructure sub-sector		
1	Maintaining for NIMBEC a GIS based master *data-base of all participating Ministry infrastructure works and temporary works schemes* (Social protection schemes) their progress, jobs targets and jobs being realized suitably noted with information on any ongoing major issues and constraints in the delivery of the NaSIEP.	☐
2	*Tracking of all UN projects under the purview of the GEC proj*ect and included in the NaSIEP.	☐
3	Providing *quality assurance* of selected infrastructure works and random testing of technical quality control undertaken by individual Ministries	☐

4	Tracking of the *preparatory work and planning* of infrastructure ministries in completing infrastructure inventories and in assessing priorities through participatory planning processes	☐
5	Managing an ongoing *in-depth monitoring programme and research into best practice* examples of selected key infrastructure works and on sites where demonstration of best practice and on-job training is arranged	☐
6	Establishing and tracking of poverty indicators relevant to the NaSIEP and linking these to the national poverty mapping operations	☐
7	Undertaking comparative studies of the performance of the various technologies working on similar works	☐

D. The ***enabling environment established*** for achieving technology balance.

The current reconstruction delivery programme is enshrined in a set of technical, legal, administrative, managerial and contract procurement rules, regulations and procedures which are simply not conducive to the delivery of an optimal level of jobs from the current and planned massive infrastructure works programmes.

In order to create a more employment-friendly environment for the delivery of the NaSIEP, screening and vetting of projects and contracts by the NIMBEC would need to be *mandatory*. While it is accepted that it will not be practicable that all major contracts or works are in fact *'unbundled'*, where this is feasible this should be done so that a major contract is able to be broken down into a series of contracts able to be built by local contractors. Screening will then be needed to determine basic pre-classification of *contract category* and the *preferred technology* for the implementation. J*ob targets* would be set for the particular project or contract by the NIMBEC as part of the initial screening and approval process.

The project or contract would then pass through the respective Ministry's existing system to be packaged according to the *interim technical standards and specification* for the particular technology nominated and scheduled for contract procurement, again using interim reformed *targeted procurement* processes, wherein social targets (jobs and SME development) are set alongside economic and financial targets for the infrastructure contract involved.

There will be a number of rapid reforms necessary to get to this stage in enabling a state of *technology equilibrium* and to quickly accomplish the improved jobs targets set. These will include basic legal, technical and administrative modifications, the (re)classification of contracts and contractors, the modification of laws and regulations relating to the construction sector, arrangements for improving access for SMEs to business development finance, technical training for NaSIEP contractors and consultants, the introduction of new technical standards for MEB, LBES and LI technologies and method statements specifications and incentives for MEB, LBES and LI technologies.

Short-term consultancy inputs by international experts in such fields as targeted procurement, technical specifications, legal issues and administrative fast tracking procedures will be necessary immediately following the start of the NaSIEP. These consultancy inputs will be needed to assess, in collaboration with local professional institutions, the need for and the actual extent of these reforms, so that specific documentation can be quickly prepared for the necessary *"fast track"* interim documentation while more comprehensive legal and technical specifications and procedures are prepared for the future works.

Addressing labour productivity

It will be necessary for each technical ministry to develop acceptable labour productivity technical norms for the calculation of contract estimates per technology option and as well to make these productivity technical norms available to contractors and consultants and workers' and community organizations who should be consulted before they are finalized. These labour productivity technical norms should be determined in full consultation with representatives of both the workers' and employers' associations.

Labour productivity technical norms will be the very basis for the engagement of productive labour in the MEB, LBES and LI works activities. This is in order that these labour-based technologies remain viable and competitive against EB alternatives and as such preserve the credibility of the government's strategies and programmes addressing the employment challenges.

The ILO has available sets of labour productivity technical norms which are in use in various countries engaged in LBES works programmes and these would be able to be made available and adapted for use in Iraq, taking into account the special local working conditions and especially the severity of the climate at certain times of the year.

For large LBES or LI projects or contracts where large numbers of casual labour is needed, it is recommended that large and prominent sign boards be erected which clearly state the relevant productivity technical norms and the daily payments and other conditions which apply to the work. This will ensure also that decent working conditions are promoted and that they in fact become the norm and that women are better aware of job opportunities.

Appropriate Labour clauses for "Decent" Working conditions

The government of Iraq has recently developed a new Labour Code and this needs to be read in conjunction with the set of basic labour principles enshrined in the International Labour Organisation standards which have universal application.

Contractors working in the Iraq (re)construction programmes shall in all circumstances respect the basic principles of these standards which are:

(a) the freely exercised right of the concerned workers, without distinction, to organize, to further and to defend their interests as well as the protection of those workers who exercise their *right to organize*;
(b) *prohibition of forced or compulsory labour* in all its forms;
(c) *equal remuneration for men and women* for work of equal value
(d) *prohibition of employment of children* below the age specified in the Iraq Labour Code as the minimum age for employment permitted

which by its nature could be hazardous to the health and safety of an adolescent

(e) *equality of opportunity* and treatment in respect of employment and occupation without discrimination on grounds of race, color, sex, religion, political opinion, national extraction or social origin.

A sample draft Labour clause for inclusion in the (re)construction contracts is included in ***Annex B***.

International experience points to the fact that with a large number of transient workers attached top the construction sector in most countries, that there is also an increased risk of the transmission of HIV and other Sexually Transmitted Diseases (STDs). To address this problem, the IMBEC will need to consult closely with the Ministry of Health concerning this important issue, and to the extent necessary and as considered appropriate by the relevant authorities, to increase HIV awareness activities on all work sites and in the proximity of the works, for all persons considered at risk.

Particular reference is made to the toolkits for HIV prevention prepared by ILO-AIDS and UNAIDS which could be adapted for use in Iraq. The HIV awareness activities for all construction workers should also be incorporated into the deliverables in the construction contracts in Iraq as is the case in many other countries at the present time. The ILO has model contract clauses available for this purpose.

Mandatory screening/approval of projects/contracts by the NIMBEC.

Initially the key work of the technical team will be assisting the technical Ministries in the screening of their overall works programmes into types of infrastructure, appropriate technology categories for their implementation. The distinction between public works and community works in very important, however it does not presume that these categories in any way assume implementation by *force account*, which is expected to be the exception rather than the rule for the implementation of both public and community works projects in Iraq.

Public works and community works in a wider sense here are *investments sponsored/financed/owned by government/community* but executed by the private sector. This would be especially the case with SMEs and local consulting firms working in accordance with the criteria to be defined by the public/community authorities relating to procurement.

Type of Infrastructure

	Issue	Public Works[5]	Community works	Social Infra	Eco[6] Infra	Yes	No
1	Basic Category					☐	☐
2	Type of infrastructure					☐	☐
3	Participatory planning process involved?					☐	☐
4	Community agreement to maintenance?	**N/A**				☐	☐
5	(Re) construction?					☐	☐
6	Maintenance work?					☐	☐
7	Temporary works?					☐	☐

Choosing the appropriate technology

	Issue	Yes	No
1	Is design and specification suitable for use of LBES or MEB methods?	☐	☐
2	Are alternative materials available on site which could be used in a modified design?	☐	☐
3	Can the design and specifications be modified to enable adoption of alternative local materials and LBES/MEB methods?	☐	☐
4	Is there sufficient labour locally available for the use of LI/LBES work methods?	☐	☐
5	Is labour agreeable to project productivity technical norms?	☐	☐

[5] *Public works undertaken through a contract system involving competitive bidding.*

[6] *Economic infrastructure as defined by the ILO is that which results in the improvement of accessibility and terms of trade; is labour saving; improves human capital, contributes to social cohesion; environmental improvement; and is directly productive.*

To quickly determine basic category into which the screened work can be placed refer back to the flow chart at the end of Chapter 2. For the initial determination of the number of jobs possible, an analysis of the Bill of Quantities will be necessary to assess item by item the labour/materials and equipment costs splits. Alternatively, by introducing a general formula for a particular technology type which can be applied to the particular scheduled items, jobs to be generated can then also be broadly estimated through the calculation of Work Days involved, however this method is not recommended as it is often far from accurate.

Basic works category for screened project

	Category	**Jobs targeted**	**Yes**	**No**
1	Equipment-based (EB) works	☐	☐	☐
2	Modified Equipment-based (MEB) works	☐	☐	☐
3	Labour-based equipment supporte (LBES) works	☐	☐	☐
4	Labour-intensive (LI) works	☐	☐	☐

Where it is considered that the option of technology should be left to the contractor, then preferential assessments should be made for the tenderer(s) who incorporate job and SME creation in their bids or who propose viable alternative materials or designs which in turn can optimise greater use of available and sustainable local resources.

In such cases the specifications should however be written assuming that MEB, or LBES methods would be utilised and an example of the notation of a typical civil works schedule to this effect is included as ***Annex C.*** As Annex C demonstrates the conversion of a conventional EB project into a MEB project means leaving alone those components of the line items which can only be sensibly undertaken by EB methods in order to achieve the minimum technical standards or cost efficiencies (such as long haulage, heavy compaction and heavy rock excavation) and in ensuring that for items such as short haul earthmoving and drainage works (which can be done as efficiently by other methods) that preference is given to the more employment-friendly approaches/technologies.

The ILO has available standard technical specifications for LBES and LI methods for a range of infrastructure works and with specialist inputs these can be readily adopted to meet Iraq requirements.

Targeted Procurement (TP)

Procurement, in the context of these guidelines, may be described as the process which creates, manages and fulfils contracts and is concerned first of all with establishing and documenting what is required; then inviting interested parties to bid to provide the required goods or services/to construct or maintain infrastructure; awarding the contracts to successful bidders; and subsequently monitoring the results and paying the contractors for the successful execution of their contracts.

All procurement is "targeted" in one way of another. For example a donor agency or a development bank will likely state that preference is to be given under the contract to the supply of materials or equipment from particular source in which they have an interest. Such conditionality can also extend to quite restrictive criteria regarding the qualifications of those entitled to bid for the contracts and therefore *de-facto* excludes others from bidding.

Targeted Procurement, in the context of these guidelines, is a system of procurement which can be used to provide for more local employment and local business opportunities for targeted individuals and communities in a fair, transparent, equitable, competitive and cost effective manner. Targeted Procurement is therefore a convenient tool for linking government social policy objectives with viable strategies and programmes to achieve those objectives.

Targeted Procurement also permits these social objectives to be quantified, measured, verified and audited. It is concerned not only with what is procured, but also with who provides the service/supplies the goods/constructs or maintains infrastructure i.e. who benefits from the economic activity generated by procurement.

There are 2 methods for introducing targeted procurement systems; one is to *prescribe the methods* in the relevant contracts and the other is to *offer tenderers the choice* and to score the various contract bids according to a system which provides points for both the financial as well as the social (e.g. local employment and SME generation, alternative designs using more (sustainable) local resources)

Targeted Procurement *Prescription Method*: This involves specifying employment-intensive technologies and methods of construction/manufacture in the tender document or specifying the minimum amount of wages which are required to be paid in respect of a particular contract;

Targeted Procurement *Incentive Method*: This affords tenderers the opportunity to choose and propose the technology/construction method/method of materials manufacture they wish to use in order to maximise the participation of labour and local SMEs in the construction works.

Suitable resource specifications can be used in both methods to ensure that the deliverables are attained. Either method may be used to increase the quantity of employment generated per unit of expenditure. It will be up to the NIMBEC to decide

on the preferred methods for procurement; however it may be expedient to promote the *Prescription method* as the preferred method during at least the first 2 years of the reconstruction works so that the construction sector is given a real chance to establish a state of technology balance and be better aware of the technology options.

In a situation of genuine technology equilibrium the government policies, development objectives, price mechanisms and resource specification, enable tenderers to bid the most appropriate amount of targeted labour, which they undertake to engage in the performance to the contract. This method encourages the tenderers to use their knowledge, skill and creativity in arriving at an optimum economic mix of equipment, technology and labour in order to win bids.

Targeted procurement methods have been utilized in South Africa in recent years and Standards South Africa have now published a number of construction procurement technical standards[7] that address both the good governance aspects of procurement and the use of procurement methods suitable for adoption in Iraq.

The range of contract documents currently in use in Iraq will need to be reviewed in order that the introduction of targeted procurement is planned in such a way as to incorporate the existing basic documents but with appropriate modifications.
It is expected that the FIDIC Short form of contract (1999) would be able to be adapted for use minor works up to USD100, 000 and incorporate targeted procurement requirements and likewise the World Bank Standard Bidding document for Smaller work could be adapted and used for works up to USD1.5 million while modified FIDIC conditions of contract would be a useful basis for a contract model for contract works in excess of USD1.5 Million. The establishment of the final form of contract for the NaSIEP works may however a detailed assessment by a specialist consultant.

Institutional setting

The implementation of NaSIEP is conceived as a decentralised programme with a central coordinating mechanism. Each line Ministry will deliver its infrastructure programme through its regular channels with as far as is possible decentralization *of responsibility* in the design, implementation and maintenance of the reconstruction works.

This means the early establishment of *appropriate local level planning* where there is participation from the communities involved. While there are several local level planning options available, the ILO model for Integrated Accessibility Planning,

[7] SANS 1914 (2002), *Targeted construction procurement, Part to 6 covering Participation of targeted enterprises, partners, and labour in various situations*
SANS 10396 (2003), *Implementing preferential procurement policies using targeted construction procurement procedures*;
SANS 10403 (2003), *Formatting and Compilation of Construction Procurement Documents*; and
SANS 294: 2004, *Construction Procurement Processes, Procedures and Methods.*

where the unifying factor in the planning process is the *ease of access*, is a relevant and proven approach on which to base this local empowerment.

The central NIMBEC will be seen to be playing an influential role in the new directions being taken by the NaSIEP and the greater emphasis being placed on the role of the private sector, but this is not to exclude the active involvement of community based organisation who may be interested in bidding for contracts. The development of *local contractors*, *local community organisations and SMEs* to be able to play a major role in the delivery of the NaSIEP will require special emphasis if we are to be move towards technology equilibrium where local capacities play an increasingly more significant role than is presently the case.

This will particularly be the case in the *maintenance of the completed works* which of course is fundamental to the viability and sustainability of the investment made in the reconstruction. Fortunately it is also in the area of recurrent routine maintenance of completed infrastructure that there lie certain sustainable employment opportunities, as the national and local authorities will surely be aware of the need for recurrent funding for this work and will as a result of the NaSIEP be able to give priority to the use LBES methods in undertaking this work.

Check list of issues to be addressed in the creation of an enabling environment for technology balance.

Creating an enabling environment for the delivery of the NaSIEP		
1	Ensure the successful delivery of the NaSIEP *awareness raising campaign* and the launch of the NaSIEP capacity building programme	☐
2	Where feasible *un-bundle large contracts* into as series of contracts able to be handled by national contractors	☐
3	Establish interim (and eventually final) *labour productivity technical norms* for labour activities in the infrastructure works undertaken by the infrastructure ministries	☐
4	Determine *standard labour clauses* for inclusion in all bidding documents, reflecting the principles of "Decent work" and in particular specifying that women be given equal access to employment opportunities and equal pay for work of equal value.	☐
5	Ensure *adequate technical skills development and training* at all levels so as to address skills shortages and to provide also equal access for women to these training opportunities	☐
6	Promote the realization of effective *local level planning* and *decentralised decision making* regarding local and national infrastructure works.	☐

7	Ensure that *technical implementation manuals* (legal, procurement, administrative and technical), guidance notes and pro-forma documentation (interim and final versions) for the implementation of the NaSIEP are *published and readily available.*	☐
8	Promote the *development of local SMEs, materials suppliers and contractors* able to work directly or indirectly with the NaSIEP	☐
9	Develop an interim (and eventually final) *targeted procurement system* which will enable greater job creation and local SME development	☐
10	Engage specialist consultants to advise on and *implement regulatory, legal, technical, contractual and administrative changes* necessary for the change to targeted procurement and *fast track* methods	☐
11	Ensure up to date information is available on *labour availability* per district, poverty mapping data is accessible and that there is integration between the various infrastructure Ministry works programmes.	☐
12	Ensure *mandatory screening* of all infrastructure ministry works and contracts to establish appropriate contract category	☐
13	Ensure mandatory screening of all infrastructure ministry works and contracts to *determine appropriate implementation technology*	☐
14	*Set job targets* for each infrastructure project or contract and monitor results	☐
15	*Encourage greater community* capacities[8] to be able to plan, develop, implement and maintain essential community infrastructure	☐
16	Maintain the NaSIEP *MIS system* and utilize the results to redirect and reshape the NaSIEP	☐
17	Ensure the sustainability of the completed infrastructure works by facilitating the establishment of *effective maintenance arrangements.*	☐

[8] *Reference is made to the ILO EIIP Training Guides for Urban Planners, Municipal Engineers/technicians/supervisors, written by Tournee, van Esch and Winsvold*

Annex A

Technology assessment of infrastructure works in Iraq, December 2004

In late 2004, the UNDG for Iraq commissioned the ILO to undertake a technology audit of UN construction works to determine the potential for increasing the number of local jobs that could be created through the UN programmes as a result of a modification in the technology utilized for their implementation. The conclusions of the ILO survey "The Iraq employment assessment"[9] found that

- *Projects are currently using fairly standardized mixtures of technology and there is a wide scope for promoting the use of more labour-based equipment supported technologies;*
- *The most significant group employed in construction activities are young people in the 15-24 age group and increasing the use of labour-based equipment supported methods will increase work opportunities for this group (which is currently both the fastest expanding section of the community and the section with the highest rates of unemployment and under-employment); and*
- *Training is a major priority for increasing productivity (whether LBEST or not) and this training should, in particular, target skilled workers.*

The employment assessment also determined key issues to be addressed for the development of a more employment-intensive (labour-friendly) programme approach for the Iraq reconstruction works. These included the need for examining:

- *Techniques for promoting labour-based equipment supported equipment supported construction, including contract conditions, the choice of development technology, changing attitudes to LBEST, the technology for community-based projects, suitable labour-based equipment supported activities, the appropriate level of technology, targeting and screening labour-based equipment supported projects, the project designers' role in the process, choosing a contracting process and choosing local materials;*
- *Assessing prospects for labour-based equipment supported works, embracing appraisal techniques and indicators of viability, previous experience with labour-based equipment supported technology, key factors to consider in applying assessment methods, sustainability and central government commitment;*

[9] Prepared by Mr. Abdul Karim Al Badri, Architect, MOLSA; Ms. Faten Zaya, Statistician, MOPDC; Dr. Saleh Khazaal Al-Okaily, Civil Engineer, local consultant; Mr. Khalid J. Fahad, Economist, local consultant; and John Tracey-White, international specialist.

- *The role of the private sector, such as the profitability of labour-based equipment supported methods and the development of small-scale LBEST contractor capacity;*
- *Creating an enabling environment for labour-based equipment supported construction, including the development of appropriate contract procedures, design specifications, simple contract documentation, decentralized authority and providing assistance in contractor development;*
- *Putting labour-based equipment supported policies into practice, covering previous LBEST experiences, procurement procedures (specifications and conditions of contracts), better use of locally available materials and resources, performance standards, "method type" specifications, force account methods versus private sector approaches and the need for skilled as well as unskilled labour;*
- *Factors to consider in choosing labour-based equipment supported methods, such as equipment, labour, institutional issues and project management training needs; and*
- *Broad recommendations for institutionalizing labour-based equipment supported programmes are outlined at the end the paper, including mechanisms for facilitating LBEST programmes and mainstreaming a national programme.*

The ILO survey was however based on a relatively small sample of the work of the participating UN and Iraqi agencies[10] and included an overall assessment based on reported data of selected projects and case studies of a sample of 11 individual projects covering a wide range of sectors and sources of funding.

The results of the assessment

Project characteristics: *The available funding for the sample projects totaled US$ 2.4 million, of which US$ 1.98 million was allocated to civil works and construction related activities. The average project was around US$0.25 million, the smallest being $35,110.00 and the largest over US$ 1.2 million.*

Scope of projects: *The projects were all implemented during mid-2003 to the present, with average contract duration of 106 days, and are overall 94% complete. In principle the majority of the projects (91%) incorporated job creation as part the project design and the contracts used a mixture of technologies, all using locally-available materials, but with a limited use of prefabrication and pre-cast components.*

Overall, 71% of the contracts used "standard" or conventional civil works implementation methods/technology and around 15% used either machine or labour-based equipment supported/intensive technology.

[10] MOLSA, MOE, UNICEF, UNHABITAT, UNDP, UNIDO

Civil works implementation methods/technology

Main employment indicators: *The employment content of the civil works projects consisted on average of 7% professional staff, 19% supervisors, skilled, 33% and 41% unskilled. These proportions are similar to those that would be expected with standard contracting conditions.*

Overall, wages accounted for around 27% of the contract costs which is again consistent with the use of standard construction techniques. There was a wide range of daily wage rates, partly explained by the difference in project start dates, but also by the different types of contracts.

Constraints: *Questions about the supply of workers indicated that there was an adequate supply of unskilled workers (91% of respondents), some shortages with skilled workers, but the greatest gaps were in the supply of supervisory staff.* ***The main bottlenecks/constraints in implementation of the projects were identified as (1) lack of trained staff, (2) lack of access to credit and (3) lack of material resources****. All the project managers interviewed believed that skilled workers needed additional training, followed by training for supervisory staff.*

Employment created: *The sample projects all included civil works, but other components were also incorporated, such as mechanical/electrical works (55% of contracts) and equipment and furniture (73%). The data collected allowed a fairly detailed assessment to be made of the total employment created by the projects. The average number of workers per contract was 110, over 90% of which were youths (aged 15-24), 71% unskilled and 90% fully able-bodied. Very few of the workers were female. Permanent jobs accounted for 7.5% of the total employment. Estimates were also made of indirect employment – accounting for around an additional 20% of the jobs created through the projects, the majority of which were for services provided pre-implementation. This is rather on the low side as none of the projects were strictly "economic" infrastructure. If agricultural sector projects (particularly irrigation) had been included then the number of indirect jobs (mostly post-implementation) would be substantially higher.*

Civil works expenditure: *The average civil works expenditure was also analysed, labour accounting for 27% on average of contract values, local/imported materials some 30%, mechanical equipment and tools, 13% and overheads/preliminaries and profit around 31%. These average values are similar to what would be expected when using "standard" levels of technology, although the overheads/preliminaries and profit component is rather higher than would normally be expected (say 20%), reflecting the uncertainties and risks involved with construction activities in Iraq at present.*

Construction sector: *In addition to the project surveys, data was also collected in Baghdad on construction organizations. Prior to April 2003 there were around 23,000 contracting organizations, of which 600 were construction companies and the balance were individual contractors. The largest number of contractors was in the middle grade (5), with relatively few in the higher grades. Since April 2003 there has been a substantial growth in the number of contractors (30% overall), but the highest growth is in the higher grades of construction companies. Overall, however, the industry has obviously responded to the demands created by the reconstruction*

programmes and there would appear to be no shortage of construction organizations. The suitability and experience of these organizations, however, was not assessed.

Workforce projections

The values obtained during the survey on the proportion of contract values used for paying the workforce and the distribution of the tasks of the workforce, between skilled and unskilled labour, supervisors and professional staff is useful as a basis for making a "crude" broad employment projection.

Assuming an annual civil works investment of US$ 1 billion the current workforce requirements, then the mix of labour and equipment as found on the UN projects surveyed, would create around 122,500 jobs[11]. If the technology mix is changed by a conservative additional 5% of the contract values to be used as wages, then the number of jobs increases to around 145,000 - an incremental increase of 22,600 jobs.

Current and projected Labour-intensity of UN supported infrastructure projects

Investment	Jobs possible with 27% investment to labour costs[12]	Jobs possible with increase to 32% of investment to labour costs
USD1Billion[13]	**122,500**	**145,100**

With the currently projected level of investment and reconstruction support funding pledged to Iraq, it can be reasonably expected that very significant employment opportunities will be available to Iraqis when the security conditions permit. This will be the case provided that there is a rapid development of the local contracting capacities and the use of more labour-friendly work methods, two key factors which are not the norm at the present time.

The reconstruction funds available from both the U.S. funded Iraq Relief and Reconstruction Fund and the International Reconstruction Fund Facility for Iraq (IRFFI) the reconstruction funds, grants and loans, amount to tens of billions of USDs. The Congress Research Service report; Iraq: Recent developments in reconstruction assistance[14] notes that Congress approved USD 2.48 billion to the Iraq

[11] A "Job" here being defined as equivalent full-time employment of 200WD per annum paid at the market rate

[12] Assuming an average USD4.8/day unskilled, USD17.7/day skilled, USD21.8/day supervisory and a variable mix of skilled, unskilled and supervisory workers as found in the ILO 2004 survey.

[13] One thousand million

[14] CRS Report for Congress, 20 December 2004, Curt Tarnoff Specialist in Foreign Affairs, Foreign Affairs, Defence and Trade Division, Order Code 31833

Relief and Reconstruction Fund in April 2003 and later a further USD18.4 billion was appropriated for Iraq reconstruction by Congress.

Of this, according to the Iraq Project and Contracting Office (PMO) only some USD9 billion had been obligated with some USD2 billion involving work in place involving 2349 construction starts and employing only 40,937 Iraqis, so reflecting the highly equipment-based approach currently in use.

Current and projected Labour-intensity of US supported infrastructure projects

Investment	Jobs reported for Iraqis	Jobs possible with 32% investment to labour costs
USD2.2Billion	**40,937**	**290,200**

Understandably there are currently serious obstacles, largely related to security, hampering the delivery of the U.S supported reconstruction programme and these include those relating to the contracting system which has meant that most work for Iraqi business has come in the form of subcontracts.

These guidelines outline ways and means in which both the technology options can be provided for and the contracting procedures can be reformed in order that many more Iraqis can be employed under the massive reconstruction programmes, without compromising on the timelines, cost or quality of the works involved.

Annex B

Draft model labour clauses relating to "Decent"' working conditions for contract bidding documents.

Respect of basic principles of labour law

The contractor shall respect the Labour Law of Iraq, enacted by the national Assembly by ……on ……..and also the International Labour Standards of the International Labour Organization. In particular the contractor shall in all circumstances respect the basic principles of these standards which are:

(f) the freely exercised right of the concerned workers, without distinction, to organize, to further and to defend their interests as well as the protection of those workers who exercise their *right to organize*;

(g) *prohibition of forced or compulsory labour* in all its forms;

(h) *equal remuneration for men and women* for work of equal value

(i) *prohibition of employment of children* below the minimum age as defined in the Iraq Labour Code as the minimum age for employment permitted which by its nature could be hazardous to the health and safety of an adolescent

(j) *equality of opportunity* and treatment in respect of employment and occupation without discrimination on grounds of race, color, sex, religion, political opinion, national extraction or social origin.

Decent Work conditions for infrastructure works

Rates of pay; The contractor shall ensure that the wages of its personnel (skilled and unskilled), their hours or work and the labour conditions are at least as favorable as those established for work of the same character in the construction industry in the area where the work is carried out and no less than the prescribed minimum wage.

Engagement of labour; Priority shall be given by the contractor to hiring locally available labour and where there is a surplus of applicants for such employment the lottery system shall be utilized so as to ensure an equal employment opportunity for men and women. Where local workers are found available in sufficient numbers they shall be recruited from within 5 km of the actual worksite and new workers should be taken on as the project activities move ahead.

Timeliness of payment; The contractor shall ensure that wages are paid in local legal tender in full and directly to the workers concerned at least fortnightly (every 2 weeks).

Default of Payment of wages; In the event of default in payment in wages to any worker employed on the contract, by the contractor and or his/her subcontractors, and if a claim with satisfactory proof is received by the Government engineer, the Government engineer may make a payment of such a claim out of the monies at any time payable under the contract and the amount so paid shall be deemed payments to the contractor or subcontractor under the contract.

Payment records; The contractor shall maintain complete sets of payment records, recording the names, ages, job classification and gender of the workers and the amounts paid and information on any training provided. Such records shall be submitted together with progress payment claims made under the contract.

Health and safety; The contractor shall receive a written clearance from the government to the effect that the work site has either not been affected by the recent conflicts in Iraq or that it has been checked and cleared of any UXOs and is safe for occupation by the contractor's workforce. The contractor is however responsible for the health and safety of the workers and should ensure that they have access to safe drinking water during working hours. The contractor shall maintain a Ministry of Health approved First aid Kit and facilities on each construction site and maintain a register of all work related accidents. The contractor shall also be responsible for the evacuation of any injured worker to a hospital as a result of any work related accident.

Sanitation amenities; The contractor shall ensure that all of the workforce have access to a sanitary latrine and washing facilities during and immediately after working hours, with separate facilities for men and women and shall, if necessary, provide and maintain latrines in a clean and sanitary condition. The contractor shall also thoroughly disinfect and fill latrine pits, swamps and trenches when no longer required for the works.

Workers compensation; The contractor shall provide social security of all of its workers and workers' compensation in the event of any work related accident resulting in injury or death, in accordance with those established by the laws of Iraq in the construction industry for work of the same character in the area the work is being carried out.

Indemnity; The contractor shall be responsible to protect the public and his/her employees against accident from any cause and shall indemnify the Government of Iraq against any claims for damages for injury to persons or property, and shall take steps to insure against any such claim

Information to workers; All workers shall be provided with information contained in this Labour Clause to this contract and additionally the contractor shall inform the workers of the basis of payment under which they are engaged: that is; whether engaged on a daily wage or on piece work or task work, the expected output for the payment made and whether the worker is engaged as a skilled or unskilled worker and what, if any, training will be provided.

Annex C

Example of MEB technology notation of a Civil Works Schedule

(i. e. separation of items into EB, or LBES/LI or combinations)

Item	Tech nology	Description	Notes
01	**EB**	Setting out Horizontal and Vertical Alignment	The LI approach of using profile boards used only when conventional survey equipment not available
02	LI	Clear Site of Grass and Light Bush	
03	LI	Grubbing and Removal of Stumps and Roots	
04	LI-**EB**	Removal of Topsoil (maximum depth 150 mm)	Long haulage by EB methods
05	LI-**EB**	Removal of Unsuitable Material (depth exceeding 150 mm)	Long haulage and heavy rock excavation by EB methods
06	LBES **-EB**	Excavation, Haulage, Placing and Compaction in Layers	Heavy compaction and long haulage by EB methods
07	LBES **-EB**	Preparation of Top of Embankment	Scarifying, shaping, watering and medium compaction by LBES methods, Heavy Compaction and final grading by EB methods
08	LBES **-EB**	Improved Subgrade	Mixing, placing, shaping, watering and medium compaction by LBES methods, Heavy Compaction by EB methods
09	LBES **-EB**	Preparation of Existing Improved Subgrade	Leveling, dressing, cambering and medium compaction by LBES methods. Heavy compaction by EB methods
10	LBES	Filter and Cross Drains	Excavation, mixing placing, backfilling, and medium compaction by LBES methods
11	LBES **-EB**	Gravel Sub-base layer	Spreading and shaping and medium compaction by LBES methods, Heavy compaction, long haulage and final grading by EB methods
12	LBES **-EB**	Sand Aggregate Mix Road Base	Mixing, spreading and shaping by LBES methods Heavy compaction and long haulage by EB methods
13	LBES **-EB**	Aggregate Stabilized Natural Gravel Road Base	As above
14	LBES **-EB**	Shoulders construction	Spreading and shaping by LBES methods Compaction and final grading by EB methods
15	LI	Kerb-stones	Quarrying, dressing, laying, sand

	-EB		cushion, grouting by LI methods. Heavy compaction and longer haulage by EB methods
16	LI **-EB**	Dressed stone pavement	Dressing, laying, packing/grouting by LBES methods, Heavy compaction and longer haulage by EB methods
17	LBES **-EB**	Bitumen-Sand Sealing of Joints in Dressed Stone Pavement	Spreading by LBES methods Haulage and **heating by EB methods only**
18	LBES **-EB**	Bituminous surface dressing	Spreading, spraying by LBES methods Haulage and **heating by EB methods only**
19	LI	Excavation of Side Drains in Soil	
20	LI	Excavation of Side Drains in Rock	
21	LI	Construction of Scour Checks	
22	LI	Construction of Mitre and Catch Water Drains	
23	LI	Concrete and Brick Side Drains	Excavation, form work, laying, spreading, mortar, plastering and backfilling, vibration and mobile mixer
24	LI	Pre-cast Concrete Side Drains	Excavation, form work and backfilling vibration and mobile mixer, concrete mixing and laying
25	LI	Turfing	Grass stripping and planting
26	LBES	Tree Planting	Excavation and planting Haulage (longer distances)
27	LBES **EB**	Removal of existing structures	Dismantling (heavy work) and Disposal (longer distances) by EB methods
28	LBES **EB**	Excavation and backfilling for structures	excavation preparation, shuttering and backfilling Pumping by LBES methods, Disposal and long haulage by EB methods
29	LBES	Concrete for structures	Form work, material cleaning, placing, spreading, backfilling, finishing, curing, vibrating and compaction and concrete mixing and placing by LBES methods
30	LBES	Reinforcement for structures	Steel fixing , cutting, bending and placing by LBES~methods
31	LBES	Construction of reinforced concrete pipe culverts	Form work, material cleaning, placing, spreading, backfilling, bedding, installation, stone work finishing, curing, vibrating and compaction, concrete mixing and placing by LBES methods
32	LBES **EB**	Drainage of structures	Placing of heavy loads by EB methods
33	LBES **EB**	Stone flat soling	Preparation, trimming of surface, laying and joint filling compaction of surface by LBES methods, Long haulage by EB methods
34	LBES	Stone masonry work	Quarrying, preparation, trimming of

	EB		surface, dressing, laying, joint filling, mortar, finishing and curing, compaction of surface and cushion material by LBES methods. Heavy quarrying and long haulage by EB methods
35	LBES	Slope protection	Surface preparation, dressing, laying, wiring and finishing by LBES methods
36	LBES	Repair existing concrete structures	

Additional observation.

The above notation presumes no design change is warranted, however this issue must be the first considered as the designer becomes better aware of what local resources and materials are available that could be utilized through the incorporation of alternative design methods and specifications.

Annex D

Steps 1 and 2 in the moving towards a National Sustainable Infrastructure and Employment Programme.

STEP 1; The Commissioning of the National Inter-Ministerial Board on Employment Creation, (NIMBEC).

NIMBEC will need to be mandated with a broad agenda addressing national issues relating to economics and employment and development as outlined in the GEC project of the UNDG. The proposed NaSIEP would be an important part of the overall national agenda and a such require specialist technical expertise within the NIMBEC PMU to support and advise on the programme.

While the Board will have a high level role in the national programme it will be closely linked to or form part of existing or proposed high level decision making structures such as the Strategic Review Board (SRB) or its successor. The SRB or its successor is expected to report directly to the Cabinet of the elected Government of Iraq and will review all donor projects including those of the UN/World Bank Trust Fund to ensure that they correspond to the assessed Iraqi needs and priorities. **It is envisaged that the NIMBEC could be co-chaired by senior representatives** from the Ministries of Finance, Planning and Labour, one of whom would be seen to be the ***technical champion or technical spokesperson*** for the *National Sustainable Infrastructure and Employment Programme (NaSIEP).*

For any national Inter-Ministerial Board to be credible and effective it will need to have both technically respected and politically acceptable patrons and specialist expertise. Usually the Board will be chaired by a high ranking representative from a senior Ministry or co-chaired by high-ranking representatives of several key Ministries. The regular senior chairperson or the patron of NIMBEC would also be seen by the general public as the ***Political champion*** of the *infrastructure and employment initiative* or NaSIEP and need to be prepared to accept what will be a high profile position with respect to the active promotion and defense of the programme.

It will also be important to have the National Professional Institutions for Engineers and Architects and construction industry development and research boards fully involved in the scoping of the NaSIEP so that national professional standards and professional development aspects of NaSIEP are able to be fully embraced and supported and where necessary improved by these professional bodies as is the case with the successful Public Works Programmes[15] in South Africa.

[15] Current phase is the Expanded Public Works Programme (EPWP)

In enlisting support from the technical Ministries involved in infrastructure works, the Ministry with the largest budget and influence, outside the Ministry of Oil, needs to able to undertake the role of bringing together the other infrastructure Ministries, and in establishing support for the NaSIEP vision and programme. Each concerned Ministry will then also need to establish intra-Ministry groups dedicated to the realization of the NaSIEP programme component which relates to that particular Ministry.

It is also envisaged that senior representation on the NIMBEC would be provided from among the following key Ministries.

Finance	☐
Prime Minister's Office	☐
Planning	☐
Labour & Skills Development	☐
Education & Training	☐
Enterprise development	☐
Highways	☐
Urban Development	☐
Rural Development	☐
Water Supply & irrigation	☐
Housing	☐
Construction Industry	☐
Agriculture & fisheries	☐
Regional Development	☐
Land, Environment & Natural resources	☐
Provincial Councils & Local Government	☐

In addition to representation from technical Ministries it is desirable that the NIMBEC also has senior representatives from both the public and private sector and such overall representation could include representation from among the following.

Technical Line Ministries	☐
Central Bank	☐
Employers and Contractors organizations	☐
Workers organizations	☐
Civil society	☐
I/NGOs	☐
UN Agencies	☐
World Bank	☐
Bilateral agencies	☐
Academia	☐

Checklist of preparatory work for the establishment of NIMBEC.

Preparatory work for establishment of NIMBEC		
1	Finalization of TOR , budget and agenda for the NIMBEC and PMU drafted and approved	☐
2	Formal adoption of the Vision Statement for a National Sustainable Infrastructure and Employment Programme (NaSIEP)	☐
3	Government economic development and employment policies reviewed and expanded to promote the use of appropriate employment-enhancing technologies in the infrastructure sectors	☐
4	Government approval given and Government resources allocated for the creation of NIMBEC together with a supporting Programme Management Unit (PMU) with specialists for the NaSIEP component	☐
5	Professional bodies, prominent academics, key private sector stakeholders, workers organizations and civil society representatives mobilized to support and debate the NaSIEP	☐
6	NIMBEC Political Champion identified & appointed	☐
7	NIMBEC Technical Champion(s) and partners identified & appointed	☐
8	Membership on NIMBEC finalized	☐
9	Intra-Ministerial Groups convened to discuss issues, constraints and solutions for the infrastructure and employment initiatives under NaSIEP	☐
10	NIMBEC inauguration to coincide with the “Step 2” arrangememnts for the launch of the national awareness raising campaign for the NaSIEP	☐

Specialist technical services provided to the PMU for the NaSIEP component

The NIMBEC will require a technical secretariat and specialist technical services for its effective operation and this is envisaged as being provided by the Programme Management Unit (PMU) which would be responsible for the daily management of the overall national employment programme and report to the permanent representative of the Inter-ministerial Board.

Among the specialist technical services provided within the PMU will be experts able to advise a Government on the policies, strategies, practices, design, monitor and implementation and monitoring of infrastructure programmes for the NaSIEP in an employment-enhanced manner and able to assist Government to create the necessary enabling environment for this to happen.

The infrastructure and employment experts within the PMU would work closely with a specialist Inter-ministerial and Intra-ministerial technical working group to deal at first hand with the delivery of the actual national infrastructure reconstruction programme at both national and local level.

Checklist of technical responsibilities of the infrastructure and employment specialists in the PMU.

Technical responsibilities of the NaSIEP specialists in the PMU		
1	Review and advise on investment, economic, employment and social ***policies and strategies***	☐
2	Assist NIMBEC in the ***national awareness raising*** and orientation programme concerning the NaSIEP	☐
3	Actively promote and encourage all ministries involved in infrastructure works to ***facilitate genuine technology equilibrium*** in their sectors so that informed decisions can be made when selecting technologies for project implementation	☐
4	Advise ministries on how to undertake ***project screening*** to determine appropriate category and most appropriate technology for implementation (EB, MEB, LBES, LI)	☐
5	Facilitate the introduction of ***targeted procurement systems*** for all contracts and the unbundling of larger contracts into contracts able to be carried out by Iraqi contractors	☐
6	Advise ministries on how to adapt most appropriate ***interim contract specification amendments***	☐

7	Advise ministries on ***minimum labour productivity norms and labour clauses enabling "decent work"*** in infrastructure contracts	☐
8	Track ***poverty and un-employment data*** as well as labour availability data	☐
9	Support the setting of participating ***line ministry job creation targets***, screen project as suitable for execution and define modalities per sector and programme	☐
10	Establish and maintain effective ***coordination and monitoring*** systems based on individual Intra-Ministry MIS systems	☐
11	Advise on the immediate national ***skills development*** and capacity needs for the overall reconstruction programme	☐
12	Advise on the ***programming and resource allocation*** mechanisms;	☐
13	Advise on the introduction of ***local level participatory planning*** for the selection and prioritizing local infrastructure needs	☐
14	Develop functional and ***appropriate methods, standards and tools*** for programming, planning, implementation, monitoring and evaluation.	☐
15	***Build capacity*** within the Government and the private sector to implement projects within the overall NaSIEP framework.	☐
16	Ensure adequate ***maintenance arrangements*** are in place for the completed infrastructure works	☐
17	Support incorporation of ***alternative infrastructure technologies*** in University and technical college curricula	☐
18	Assist social partners understanding of ***fundamental rights & principles at work and of the social dialogue processes***	☐
19	Arrange for ***special data gathering***, ***quality assurance*** and comparative technical studies of the performance of the various technologies under similar situations	☐
20	Provide ***technical support and advice to the field operations*** of the UNDG GEC programme	☐
21	***Monitor progress*** of the NaSIEP and introduce changes as necessary to keep programme on track	☐

STEP 2; A national awareness raising campaign for the NaSIEP.

An awareness raising campaign needs to cover all key stakeholder involved in the initiatives proposed for employment generation in the national infrastructure reconstruction programmes. With the identification of a *Political champion* and a *Technical champion* for the programme, there will be good prospects for a solid start to the awareness raising. The key personnel who will be involved in the NIMBEC will then require briefing and orientation to the programme. Beyond the NIMBEC will be the general public and the communities who will be involved and they too will require consultation and orientation. It is always desirable that one or more national Professional Institutions (Engineers, Architects and or Planners), the national construction industry development board and a well recognized technical university are also closely involved with the awareness raising and programme launching so that the technical credibility of the various technology options has been able to widely debated among the concerned professionals and an official platform adopted by the respective institutions. This is especially the case where revised technical standards and contract procurement systems will need their expert inputs.

The awareness raising campaign needs to start with the technical line Ministries involved before being launched for the general public. The ILO experience in this area shows that it is important to call together key decision makers at an early stage for a specialist technical briefing on the concepts of the NaSIEP within the technical Ministries themselves and to dedicate the initial session to frank the discussions necessary for identifying obstacles and possible solutions to a more flexible approach to the question of Choice of Technology in each Ministry. Obviously there will probably initially be an interest in a MEB method approach as this can be quickly achieved without significant change (through addendums or special conditions of contract only) while more structured and specific programmes are developed involving other technology options which can have most positive impact on employment creation, small and medium business and livelihoods in general.

The government awareness raising programme for NaSIEP will be achieved through the establishment of *Intra*-Ministerial technical working groups as well as *Inter*-Ministerial working group.

The outreach of the programme to the general public and stakeholders will need to involve public meeting, an ongoing media campaign, the development of a communications strategy and the establishment of a comprehensive web site which tracks the progress of the programme in terms of both infrastructure completed but also jobs and enterprises created.

Additionally information necessary for skill development for establishing new enterprises or accessing employment under the NaSIEP will need to be well publicized and the awareness raising campaign also offers an excellent opportunity to explain and announce the framework for greater local participation in local level planning and prioritizing of local, regional and national infrastructure.

Checklist of key awareness-raising issues

Key support information based on ILO international and regional experience is readily available from the International Labour Organization to add substance to the debates on the issues raised.

NaSIEP Awareness raising issues to be considered		
1	What is the Government planning with the NaSIEP?	☐
2	Who supports it and why?	☐
3	Is NaSIEP just for the reconstruction works?	☐
4	Is this sustainable infrastructure?	☐
5	What about the future operation and maintenance of the completed infrastructure?	☐
6	What is the number of unemployed in Iraq who could be employed in these programmes?	☐
7	Will these programmes reduce poverty?	☐
8	Is it really in the national interest?	☐
9	Iraq used to have guest workers so should this not be continued?	☐
10	Are these temporary jobs or sustainable jobs?	☐
11	What does the ILO mean by "decent work"?	☐
12	What *task rates* will be paid?	☐
13	Are these people just the unskilled?	☐
14	Is training involved for the workers?	☐
15	Is training available for the engineers and managers for the NaSIEP?	☐
16	Is the private sector involved?	☐
17	Can my community bid for work?	☐
18	How do I register to receive a job or training?	☐
19	What is the relevance of employment-intensive technology[16] in Iraq infrastructure programmes?	☐
20	Should we not let market forces decide which technology?	☐
21	What is technology balance?	☐

[16] See web site http:www.ilo.org/eiip

22	What are the technology options? (EB, MEB, LBES, LI)	☐
23	What is meant by “technologies in balance”?	☐
24	What are the merits of one technology over another?	☐
25	Can LI and LBES methods be used in major works?	☐
26	What extra jobs are possible from one technology to another?	☐
27	What is the experience in other countries?	☐
28	What is the likely size of the infrastructure reconstruction programme/	☐
29	What part of the recurrent annual budget goes to infrastructure works	☐
30	Is that significant?	☐