Segunda Reunión Técnica del Programa de Comparación Internacional (PCI)

#### **Construction and Civil Engineering**

#### Global ICP Unit Development Economics The World Bank



#### **ICP Classification**

100000	GROSS DOMESTIC PRODUCT	GDP		
1500000	GROSS CAPITAL FORMATION	Main Aggregate		
1501000	GROSS FIXED CAPITAL FORMATION	Category		
1501100	MACHINERY AND EQUIPMENT	Group		
	•••			
1501200	CONSTRUCTION	Group	]	
1501210	Residential buildings	<u>Class</u>	l	•
1501211	Residential buildings	Basic Heading	I	•
1501220	Non-residential buildings	<u>Class</u>	l	
1501221	Non-residential buildings	<b>Basic Heading</b>	I	
1501230	Civil engineering works	<u>Class</u>	l	
1501231	Civil engineering works	Basic Heading	l	
1501300	OTHER PRODUCTS	Group		
	•••	•••		

- 3 BHs
- 1 Survey Conducted
- <u>once</u> for a reference year



# Survey Approach: 55 items + metadata

#### **38 GLOBAL MATERIAL ITEMS**

- 33 "pure" material items; 5 "equipment-type" items
- Allocated under each BH based on "relevance"

#### 5+5 GLOBAL EQUIPMENT HIRE ITEMS

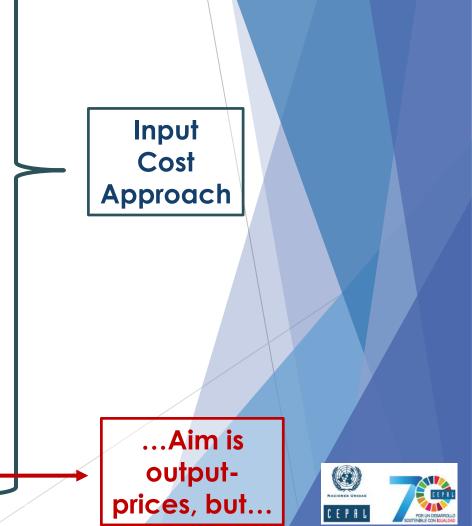
- 5 items duplicated to exclude and include operator

#### 7 GLOBAL LABOR ITEMS

1 un-skilled and 6 skilled labor items

#### OTHER DATA

- Resource mixes
- Mark-ups and professional fees (not used to date)

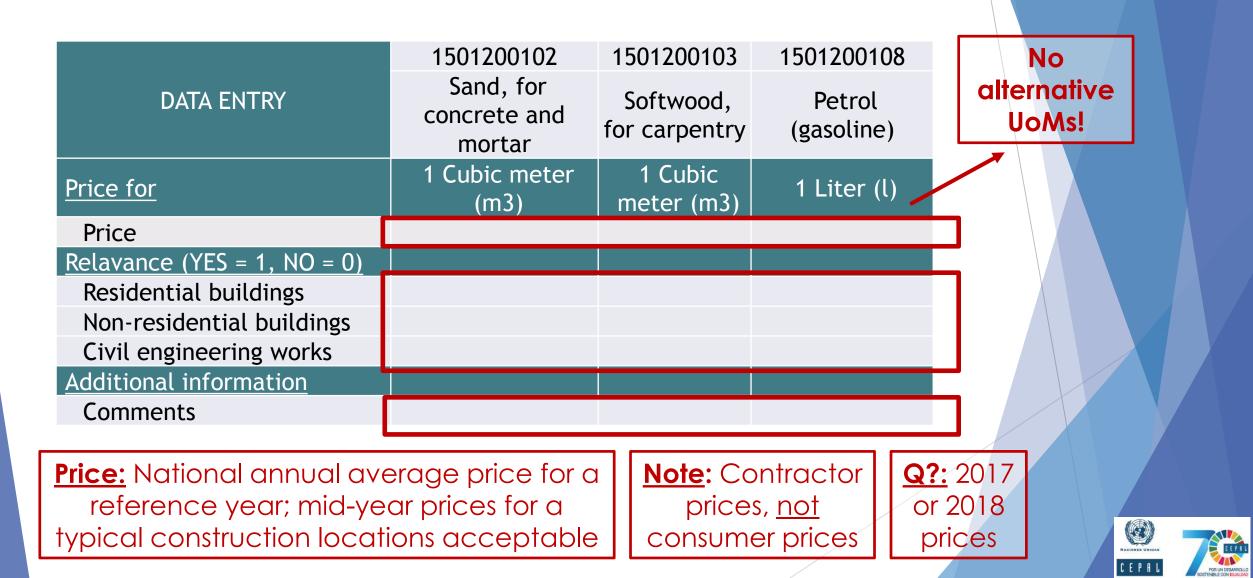


#### 33 "Pure" Material Items: SPDs

Item Code	1501200102	1501200103	1501200108
Item Name	Sand, for concrete and mortar	Softwood, for carpentry	Petrol (gasoline)
Number of units	1	1	1
Unit of measurement	Cubic meter (m3)	Cubic meter (m3)	Liter (l)
Туре	Sand for concrete and mortar	Softwood for carpentry	Petrol (gasoline)
Material	Aggregate washed sharp sand	Sawn softwood sections	
Quality	Fine	Pre-treated (national standard)	Standard grade
Size		50 mm x 100 mm	
For		Structural use	Motor vehicles
Packaging			
Exclude			



### 33 "Pure" Material Items: Data to Enter



### Relevance (Annex)

Indicative list of the relevant material inputs for construction basic headings materials for each basic heading

Item code	Material or product	Residential buildings	Non-residential buildings	Civil engineering works
1501200101	Aggregate, for concrete	Х	Х	Х
1501200102	Sand, for concrete and mortar	Х	Х	Х
1501200103	Softwood, for carpentry	Х	Х	Х
1501200104	Softwood, for joinery	Х	Х	
1501200105	Exterior plywood	Х	Х	Х
1501200106	Interior plywood	Х	Х	
1501200107	Chipboard sheet	Х	Х	
1501200108	Petrol (gasoline)	Х	Х	Х
1501200109	Diesel fuel	Х	Х	Х
1501200110	Oil paint	Х	Х	
1501200111	Emulsion paint	Х	Х	
1501200112	Ordinary Portland cement	Х	Х	Х
1501200113	Ready mix concrete	Х	Х	Х



## 5 "Equipment Type" Material Items

Item Code	1501200133
Item Name	Electric pump
Number of units	1
Unit of measurement	Piece
Туре	Electric pump for pumping water
Flow rate	10 litres per second
Temperature range	5-80 C
Head pressure	150 Pa
Specify	Brand and model

DATA ENTRY	1502111133 Electric pump
Price for	1 Piece
Price	
Relavance (YES = 1, NO = 0)	
Residential buildings	
Non-residential buildings	
Civil engineering works	
Additional information	
Brand	
Model	
Comments	



## 5+5 Equipment Hire Items: SPDs

Item Code	1501200201	1501200211	
Item Name	Wheeled loader and	Wheeled loader and	
	excavator, with operator	excavator, without operator	
Number of units	1	1	
Unit of measurement	Hour	Hour	
Tuno	Rental of loader and	Rental of loader and	
Туре	excavator, four wheel drive	excavator	
With operator	Yes	No	
Brand (indicative)	JCB	JCB	•
Model (indicative)	3CX Super Sitemaster	3CX Super Sitemaster	
Engine power (indicative)	70 kW (94 hp)	70 kW (94 hp)	
Travel speed (indicative)	30 km/h	30 km/h	
Operating width (indicative)	2 m	2 m	
Operating weight (indicative)	8000 kg	8000 kg	
Operating capacity (indicative)	4000 kg (loader); 700 kg	4000 kg (loader); 700 kg	
Operating capacity (indicative)	(backhoe)	(backhoe)	
Dig depth (indicative)	4 meters	4 meters	
Price excludes	Operating fuel	Operating fuel	
Specify	Equipment brand and model	Equipment brand and model	



### 5+5 Equipment Hire Items: Data Entry

DATA ENTRY	1501200201 Wheeled loader and excavator, with operator	1501200211 Wheeled loader and excavator, without operator
Price for	1 Hour	1 Hour
Price		
Additional information		
Brand		
Model		
Comments		

Potential daily or weekly rates need to be converted to hourly rates



### 7 Labor Items: SPDs

International Standard Classification of Occupations (ISCO)

Item Code	1501200301	1501200302
Item Name	General labourers, unskilled	Bricklaver. skilled
ISCO code	9313	7112
ISCO name	Building construction labourers	Bricklayers and related workers
Number of units	1	1
Unit of measurement	Hour	Hour
Skill level	Unskilled	Skilled
Salary type	Gross	Gross
Training	No training required	Training in a technical college or similar institution or on the job training
General definition	Performs routine tasks in connection with building construction and demolition work	Lays bricks, pre-cut stones and other types of building blocks in mortar to construct and repair walls, partitions, arches and other structures
Example tasks (a)	<ul> <li>(a) cleaning used building bricks and doing other simple work on demolition sites</li> </ul>	<ul> <li>(a) laying stone, brick and similar building blocks to construct or repair walls, partitions, fireplaces and other structures such as smokestacks, furnaces, converters, kilns and ovens, piers and abutments</li> </ul>
Example tasks (b)	(b) mixing pouring and spreading materials such as concrete, plaster and mortar	(b) laying footpaths, kerbs and pavements
Example tasks (c)	(c) digging and filling holes and trenches using hand held tools	(c) laying bricks or other masonry to build patios, garden walls and other decorative installations



## 7 Labor Items: Data Entry

DATA ENTRY	1501200301 General labourers, unskilled	1501200302 Bricklayer, skilled	Potential daily or weekly
Price for	1 Hour	1 Hour	rates need
Price			to be
Additional information			converted
Average number of hours worked per day			to hourly rates
Average net-to-gross rate			Tales
Comments			
		Average rate for net-salaries to gross-salaries	

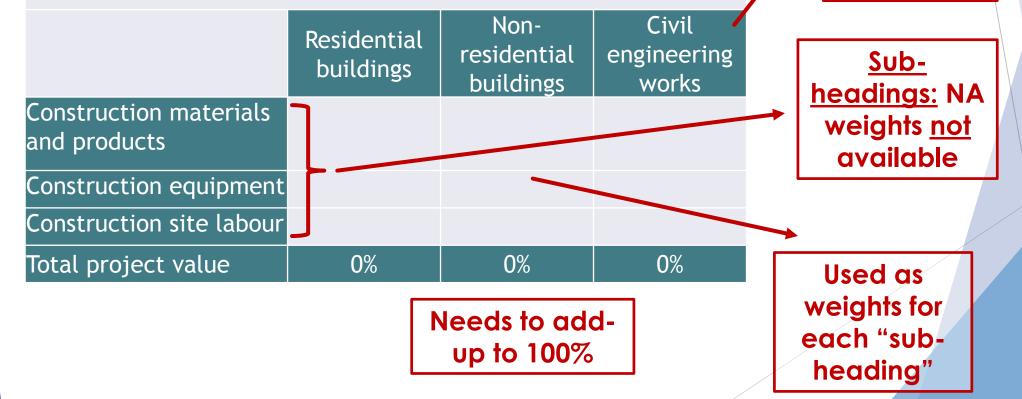


## Resource Mixes (Sheet "Support")

#### A. The mix of construction resources

What proportion of overall construction project value is taken by the main inputs to construction work (materials and products, labor and equipment) in the following types of projects? <u>BH-level:</u> National account weights available

CEPAI



## Contractors' mark-ups (Sheet "Support")

#### B. Contractors' mark-ups

What percentages should typically be added to contractors' input costs to arrive at contractors' bid prices or construction purchaser prices? Please indicate approximate percentage values.

	Residential buildings	Non-residential buildings	Civil engineering works	
General site costs and temporary works				
Head office overheads				
Profit				
Other contractors costs 1 (please specify)				
Other contractors costs 2 (please specify)				
Other contractors costs 3 (please specify)				F
Other contractors costs 4 (please specify)				
Other contractors costs 5 (please specify)				
Other contractors costs 6 (please specify)				
Total mark-up	0%	0%	0%	



## Professional fees (Sheet "Support")

#### C. Professional fees

What percentage additions should be allowed for both pre and post-contract services on different types of work? <u>Professional fees will typically comprise pre- and postcontract services, including architectural and engineering design, technical supervision, project management and other specialist services, but national rules and practices must be taken into account. Please enter the total amount as a percentage of the contractor's cost (which will include the contractor's mark-up described above). The intention is to arrive at the end-user or purchaser price for construction work.</u>

	Residential buildings	Non-residential buildings	Civil engineering works	
Overall percentage addition for professional services				





Questions or comments?

