

The

iCOSTES MANUAL

**for Cost Estimation of Performance Based
Road Maintenance Contract**

**Volume 2:
Manual for Government Cost Estimators**

**Edition 1
August 2019**



JAPAN INTERNATIONAL COOPERATION AGENCY
Strengthening of Capacity on Road Maintenance Management through Contracting (Phase 3)



iCOSTES MANUAL
for Cost Estimation of Performance Based
Road Maintenance Contract
Volume 2:Manual for Government Cost Estimators

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 Kenya National Highways Authority – KeNHA
 Kenya Rural Roads Authority – KeRRA
 Kenya Urban Roads Authority – KURA
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 Materials Testing and Research Department

The Manual would not have come to fruition without the dedication of the Cost Estimation (COSTES) Sub-Working Group Committee members, mandated by the National Working Group and the Joint Coordinating Committee to carry out this task. Therefore, we would like to recognize the individual contributions of: Eng. Tom Omai, Eng. Edwin Odwesso, Eng. Nicholas Chelugo, Eng. Walter Ochieng, Eng. Livingstone Karanja, Juliette Murugi, Qs. David Mathu, Ms. Rose Ndirangu, Eng. Ephraim Opuge, Eng. Mildred Olang’o, Phires Ogoti, Caroline Kamunya, Julius Kaliti, Motohiko Nishibayashi, Hiroshi Tsujino, Nobuya Okamoto, Kunihiro Hayashi, Takashi Nakajima, Yoshihisa Noda, Hiroshi Mita, James Nyaga and Caleb Mathuva.

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August 2019
 JICA and KRB

Preface

Welcome to iCOSTES!

iCOSTES guides you for easy and quick cost estimation of Performance Based Contract of Road Maintenance Work in Kenya. This is a part of the Japan International Cooperation Agency (JICA) 's project "The Project for Strengthening of Capacity on Road Maintenance Management Through Contracting"

The initial idea originates in 2011 as a standalone small program to calculate the cost of instructed works this was named as COSTES. From 2015 to 2018, COSTES has dramatically improved for total estimation tool of hybrid cost estimation tool of Labour based maintenance works, Machinery Based Maintenance works and Instructed works. A lot of retreats workshops and seminars have held in Kenya and Japan. As a result, hundreds of feedbacks are raised and contributed the quality improvement. However, these COSTES software were standalone program sets therefore system requirement was strict and the scene of use had been limited.

From 2018 to 2019, JICA and a Kenyan IT company organized a joint project to develop an internet-based cost estimation based on the stand alone COSTES program. Thanks to the effort of skilful staff from Japan and Kenya, internet-based cost estimation website has been constructed. This system is dramatically improved in terms of user-friendly and data security and continuously data management. We named this website system as "iCOSTES". This website is a total estimation system of road maintenance contract and there are rich features including cost estimation, user management and data management.

This system was handed over and currently belongs to the Kenya Roads Board (KRB).

The iCOSTES development team hopes the iCOSTES contributes the better and sustainable maintenance of roads in Kenya by providing appropriate cost estimation.

August 30, 2019

iCOSTES Development Team

1 GENERAL INFORMATION

1.1 General Project Overview

The purpose of the Cost Estimation System (COSTES) is to facilitate the compilation of engineering estimate for road maintenance works. This is a part of the JICA (Japan International Cooperation Agency) called “The Project for Strengthening of Capacity on Road Maintenance Management Through Contracting”

As shown in Figure 1, PBC has more benefits than Non-PBC Contracts. Also, as show in Figure 2, the length of roads under PBC is increasing. Also, the share of PBC for highway maintenance is increasing (Figure 1.3).

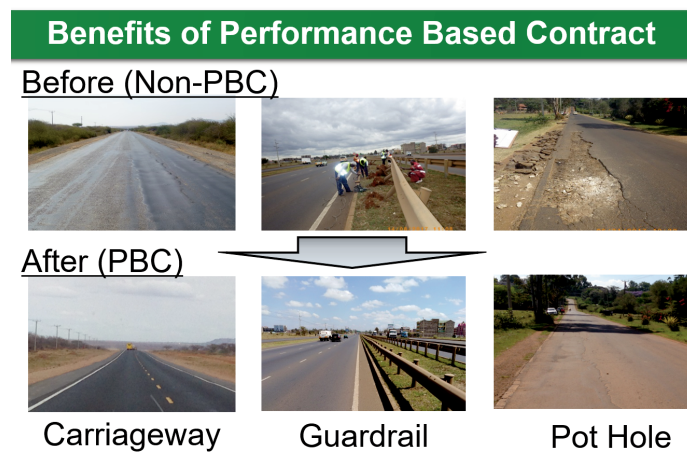


Figure 1.1 - Benefits of Performance Based Contract (PBC)

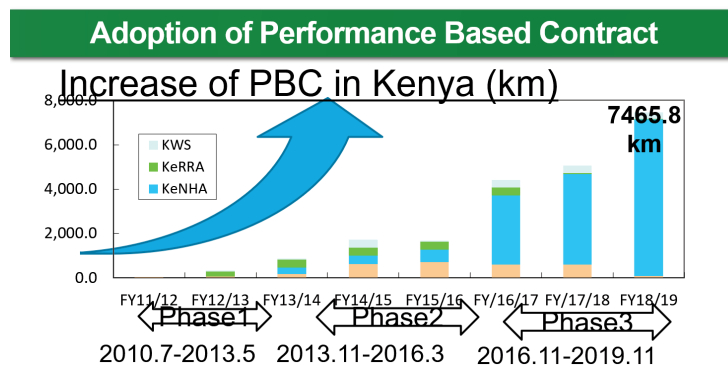


Figure 1.2 - Adoption of PBC

Share of PBC for Highway Maintenance

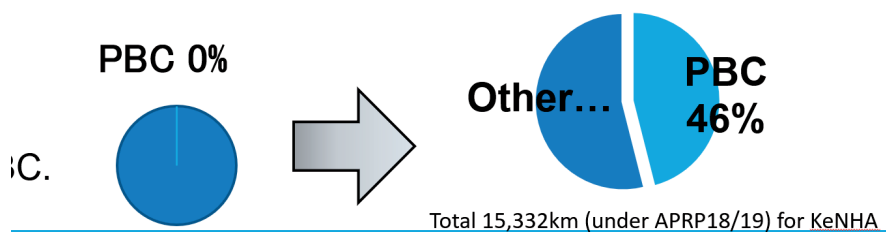


Figure 1.3 - Share of PBC for Highway Maintenance

Road Maintenance through Performance Based Road Maintenance Contract (PBC), in which road is contracted and kept at required service levels at all times; instead of conventional contracts whereby road agency identifies damages to fix.

1.2 System Development History

The history of the development of COSTES is shown in Figure 1.4. It generates cost estimates when necessary work items are selected, and their corresponding quantities inserted. Versions 2011, 2015 and 2017 can be run on any Windows-based computers, while the iCOSTES is web based and compatible with any web-based browser. In all versions a PDF reader is required to view the cost estimate output. In addition, MSExcel is needed when using COSTES 2015.

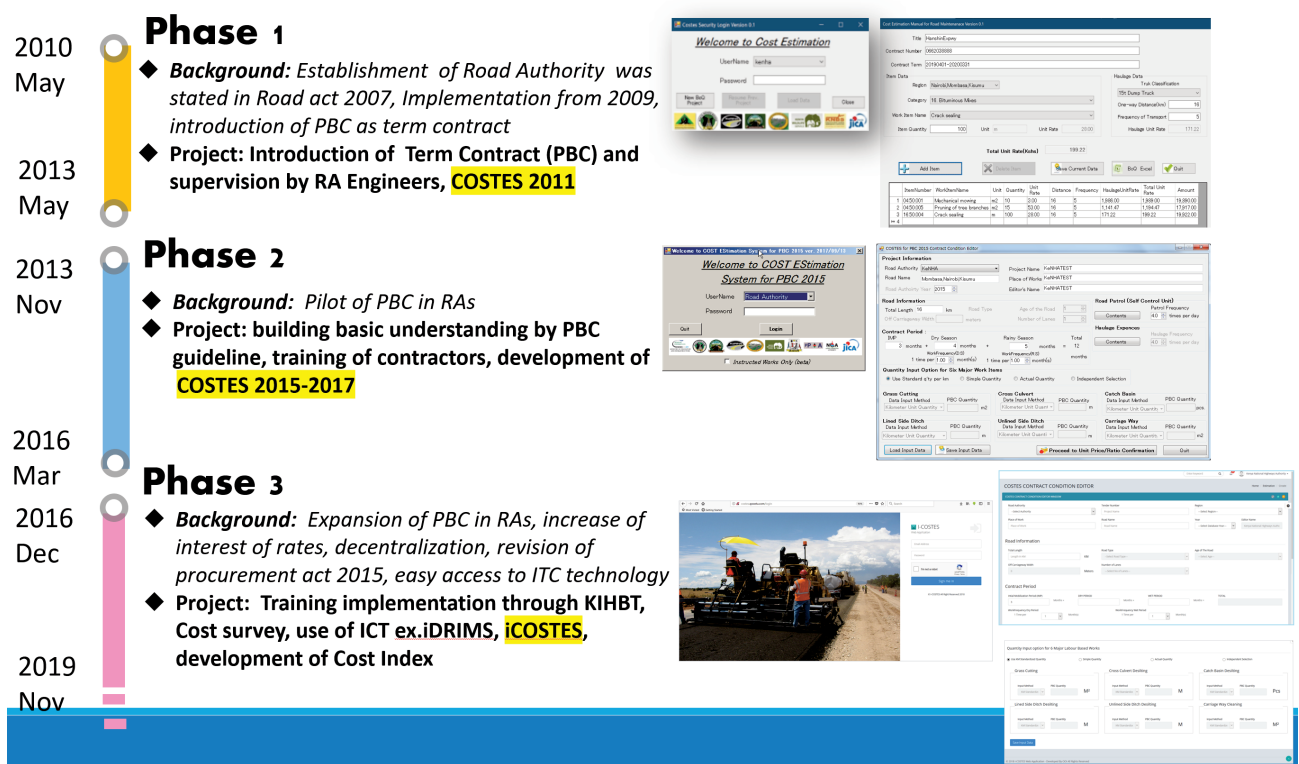


Figure 1.4 - System Development History of COSTES and iCOSTES



1.3 Manual Structure

Overall structure and relationship of PBC, CEM and CSG this manual is as shown in Figure 1.5 and Table 1.1 on the next page.



Figure 1.5 - Related Manuals

Table 1.1- Overall Structure of PBC, CEM and iCOSTES

Step	Manuals/References
Performance Based Contract for Road Maintenance in Kenya  - Provide adequate cost estimation of PBC -	<i>PBC Guideline Edition 2.0</i> <i>PBC Handbook</i> <i>Standard Tender Document for PBC</i> <i>iDRIMS (smart phone based), local agent</i>
Cost Estimation for PBC  - Provide appropriate estimation for PBC -	<i>Cost Estimation Manual for Performance Based Road Maintenance Contract (Vol.1.2.3) Edition 2.0</i> <i>Cost Survey Guidenote</i>
iCOSTES (web based) - Provide Cost Estimation Quickly and Accurately-	<i>iCOSTES Manual</i> <i>Cost</i>

1.4 iCOSTES System Ownership and Operation, User Permission

iCOSTES is owned and operated by Kenya Roads Board (KRB) and all rights are reserved.

KRB provides you with access to a variety of resources and functions, including documentation and other product information (collectively the “Documentation”), downloadable, communication and reporting modules, and other services (collectively "Services"), software, including developer tools and sample code (collectively “Software”), and Application Program Interface information (“APIs”).

The Documentation, Services, Software, and APIs (including any updates, enhancements, new features, and/or the addition of any new Web properties to the iCOSTES System), are subject to the following Terms of Use ("TOU"), unless we have provided those items to you under more specific terms, in which case, those more specific terms will apply to the relevant item. KRB reserves the right to update the TOU at any time without notice to you. The most current version of the TOU can be reviewed and are annexed to this document in the appendix.

1.5 Project references

1. Admin Manual
2. Contractor manual
3. Agencies & counties manual

1.6 Points of Contact

The Points of Organisational Contact (support and troubleshooting, coordinating, list of partner organisation, Help Desk requirements and capacity) are as follows;

Operation hours of the Contact Center are Monday to Friday (Except Holidays) from XXam to YYpm .

iCOSTES Contact Center;

Email:

Tel:

1.7 Organisation of the Manual Document

This manual is organised in sections and has separate information for different user levels.

1.8 Acronyms and Abbreviations

CEM – Cost Estimation Manual Volume 1 is for the System Administrators, Volume 2 is for the Government Cost Estimators and Volume 3 is for the Contractors

CSG – Cost Survey Guidenotes

JICA – Japan International Cooperation Agency

KURA – Kenya Urban Road Authority

KRB- Kenya Roads Board

KENHA – Kenya National Highways Authority

KENHA (2+Lanes) – Kenya National Highways Authority (2+Lanes)

KWS – Kenya Wildlife Service

PBC – Performance Based Contract

SRUQ – Standard Resource Usage per Quantity

2 SYSTEM SUMMARIES

This section shows basic flow of cost estimation, other functions of iCOSTES, system requirement and security assurance of iCOSTES.

2.1 System Requirement

- ✓ iCOSTES is available by using PC and Tablet. Using PC is strongly recommended.
- ✓ Internet Browser is essential. Microsoft Edge, Google Chrome, Firefox and Safari are recommended.
Internet Explorer is not suitable for iCOSTES.
- ✓ Internet connection is also essential. When proceeding window of the internet browser, entire data is saved in the server. Therefore, users can resume data input without big time-loss.
- ✓ For viewing output, PDF Viewer is essential.

2.2 System Security and Waiver

The security of iCOSTES is ensured by placing appropriate secured server in Kenya. However, users must ensure security of users' hardware and software. KRB has no responsibility to any users for any problems and issues caused using iCOSTES.

2.3 Types of Users and Access Levels

Table 2.1 shows the types of users for handling iCOSTES. User authorization is given by KRB iCOSTES Administrator.

The Primary user and contractor and authorized user may be able to add and modify data and information related to their function only

Table 2.1 - Types of Users

Type	Description
Administrator	This is account for System Super User and has all permissions
Agency Admin	This is a person who manages road agency account...he or she can manage road agency user
Contractors	This account belongs to contractor, can edit/view own estimations
County Government	This is a county among the 47 counties in Kenya. The data related to the estimations of each county government are managed.
KRB Admin	Alternate administrator of KRB
User	Users from ministry, counties and road agencies to create estimations

3 MAKING COST ESTIMATION

This section provides a general walkthrough of the system from initiation through to the exit for making a Cost Estimation. It is believed that the logical arrangement of the information shall enable the user personnel to understand the sequence and flow of the system.

3.1 Logging

3.1.1 Logging in



Figure 3.1- Logging in Page

On the above Welcome screen, program users have to enter their registered email address and passwords in order to use iCOSTES.

The email address in iCOSTES is the unique primary user identifier thus unique for every user in the system while the password is the secret passcode which is comprised of words, numerals and/or symbols.

These login credentials authenticate the system user before granting access rights to him/her. It is advised that Passwords should be changed frequently.

Table 3.1- Elements to log-in

Item	Valid value range	Description
E-mail Address	Authorized and notified from iCOSTES Administrator	Words are recognized directly
Password	Authorized and notified from iCOSTES Administrator	Main menu recognizes password

3.1.1 Logging Out

Click “Log Out” to exit the user interface.

3.2 Making Cost Estimation

3.2.1 Overview

A main function of iCOSTES is to create the cost estimation of PBC. Figure 3.2 indicates a general flow of creating a cost estimation. Entire input is automatically saved in iCOSTES.

Basic theory and idea are summarized in Cost Estimation Manuals.

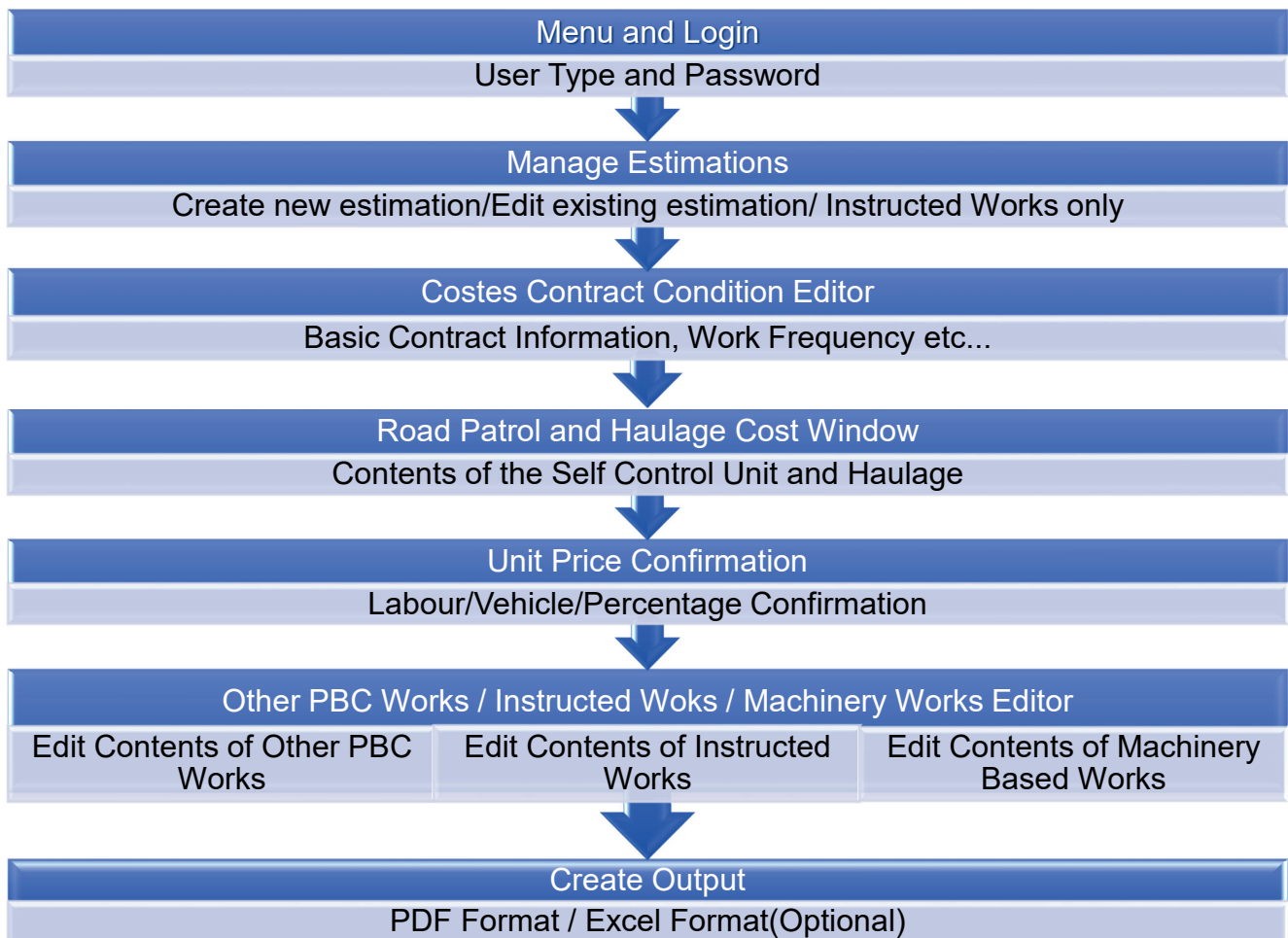


Figure 3.2- Making *Flow of Cost Estimation*

3.2.2 Contract Condition

Here the system user can create new estimations, view already created estimations and also view the instructed works only as shown in the figures on the next page.

Here the system admin can add new estimations to the system by inputting all the required estimation requirements. These requirements are to be fed into the iCOSTES contract condition editor. The requirements are as illustrated in the figure on the next page.

The screenshot displays the 'COSTES CONTRACT CONDITION EDITOR' interface. At the top, there is a search bar and a user profile for 'System Admin'. The main form is divided into two sections: 'COSTES CONTRACT CONDITION EDITOR WINDOW' and 'Road Information'. The first section contains fields for 'Road Agency' (a dropdown menu), 'Tender Number' (a text input), 'Region' (a dropdown menu), 'Place of Work' (a text input), 'Road Name' (a text input), 'Year' (a dropdown menu), and 'Editor Name' (a text input with 'System Admin' pre-filled). The 'Road Information' section includes 'Total Length' (a text input with 'Length In KM' and a 'KM' unit), 'Road Type' (a dropdown menu), 'Age of The Road' (a text input), 'Off Carriageway Width' (a text input with '0' and a 'Meters' unit), and 'Number of Lanes' (a dropdown menu).

Figure 0-1 Manage Estimations – COSTES CONTRACT CONDITION EDITOR

User selects road agency, inputs the tender number, select the region as provided by the drop down menu, mention the place of work, the road name, select the database year and then ensure the editor name is correct i.e “system Admin” for the administrator.

After completing the above personal details, then users are required to fill the Road information details. These are the Total length of the road in kilometres, select the road type either paved or unpaved, age of the road, off carriage width in metres and the number of lanes it’s made of.

Then the admin should go ahead and provide the contract period details: Initial Mobilization Period in months, provide the dry period and the wet period in months, the IMP Method(either choose IMP has both IMP and WET period work or choose if it is only IMP Works) and then input the work frequency for dry period and also for the wet period in months.

The admin then is required to choose the quantity input option for 6 major labour based works from the following four options: use KM standardized quantity, simple quantity, actual quantity or the independent selection option.

The detail of each parameter is explained in **section 3.2 of the CEM II / CEM III**.

Figure 0-2 Manage Estimations – COSTES CONTRACT CONDITION EDITOR(Cont'd)

The user chooses the PBC Quantity in Square metres for grass cutting, PBC Quantity in metres for cross culvert desilting, PBC quantity in Pieces for catch basin desilting, PBC Quantity in metres for lined side ditch desilting, PBC Quantity in metres for unlined side ditch desilting, PBC Quantity in square metres for carriage way cleaning.

The detail of each parameter is explained in **section 3.2 of the CEM II / CEM III**.

After making sure all the above details are in order the admin can now successfully save the input data.

[IMP Method]

As for the IMP Method, there are two options. The difference is;

Only IMP Periods: During IMP Periods, labour based work in IMP once.

IMP has Both IMP and WET Period Work: During IMP Periods, not only labour based works as IMP but also works as WET periods are considered. The volume of works as WET season depends on the length of IMP.

Table 3.2-1 Consideration of Additional works during Initial Mobilization Period

Duration of IMP (Month)	Considered Times of Works	
	IMP (time)	WET (time)
1	1	0
2	1	0.5
3	1	1.25
4	1	2

5	1	2.75
6	1	3.5

3.2.3 Road Patrol and Haulage Cost Window

After filling out contract condition, users can modify the road patrol (Self Control Unit) and haulage inputs by editing tables shown in the figure below. The detail of each parameter is explained in **section 3.3 of the CEM II / CEM III.**

Road Patrol (Self Control Unit)

Patrol Frequency (Times Per Day)
1

Yes/No	Item Name	Number	WorkingDays
<input checked="" type="checkbox"/>	SCU Foreman	1	30
<input type="checkbox"/>	SCU Inspector	0	30
<input checked="" type="checkbox"/>	SCU Driver(Pick Up)	1	30
<input checked="" type="checkbox"/>	SCU Pick Up	1	30

Haulage Cost

Haulage Frequency (times per day)
1

Yes/No	Item	Number	Working Days
<input type="checkbox"/>	Haulage Truck(2 ton)	1	25
<input checked="" type="checkbox"/>	Haulage Pick Up	1	25
<input checked="" type="checkbox"/>	Driver (Pick Up)	1	25
<input type="checkbox"/>	Driver (Truck)	0	25

Figure 0-3 Manage Estimations – Road Patrol and Haulage Cost Window

If the box of each item is checked, this content is the member of SC/Haulage Unit. Default value (e.g. 30days) assumes that SCU patrols the roads every day. 25days for example means that the haulage works are carried out on all days of the week except on Sunday. Numbers and working days can be changed based on the condition.

3.2.4 Unit Price Confirmation

Users can modify and check unit price and ratio by “Unit Price/Ratio Confirmation” window shown in the figure below. Firstly, users have to select the area of “Unit Price Set”. Then default unit prices and ratios will be displayed. Users can modify each value.

If logging in as a Contractor, default unit price is not shown, and all fields are blank. Contractor must fill out all unit prices from their own experience and information from the site visits and surveys. Contractor also can choose from “percentage input” or “input by cash amount” for Indirect Cost and Overhead Profit calculation.

The detail of each parameter is explained in **section 3.4 of the CEM II / CEM III**.

• **Figure 0-4** Manage Estimations – Unit Price Confirmation

3.2.5 Other PBC Works

There are various kinds of maintenance work except for six major labour based works. Therefore, iCOSTES has prepared other PBC work item list based on the “Other PBC Works” section of the Cost Estimation Manual. Users can select necessary work item(s) and specify price. If other PBC works are not necessary, users can skip this editing process. If logging in as a Contractor, COSTES does not present default unit price. The detail of each parameter is explained in **section 3.4 of the CEM II / CEM III.**

Contract Information

Road Agency: KURA Project Term: 12 Month

Project Name: Test1

Price Input Region: Nairobi,Mombasa,Kisumu Items in Year: 2017 Items in Any Year: []

Pavement Condition: Paved

Category: Road User Comfort

Service Scope: B) Pavement, Shoulders and ROW for Paved Roads

WorkItem: Height of shoulders vs. height of pavement

Price Input: Quotation Based Method-Use Own Unit Price and Quantity

Item Quantity: 35 Unit: (Unit) Unit Price: 12222

[+ Save/Refresh] [x Delete This WorkItem]

Action	Area	Paved/UnPaved	Category	ServiceScope	WorkItem	Unit	Quantity	Unit Price	Total Price	
[edit]	Nairobi,Mombasa,Kisumu	UnPaved	Road Usability	A)Road Usability	Passability	(Unit)	500	1000	500000	[delete]
[edit]	Nairobi,Mombasa,Kisumu	UnPaved	Road User Comfort	B) Pavement, Shoulders and ROW for Paved Roads	Cleanliness of the road				224418.15	[delete]
[edit]	Nairobi,Mombasa,Kisumu	Paved	Road Durability	C) Drainage	Side Drains, Mitre Drains and cut off drains (lined)				789000	[delete]
[edit]	Nairobi,Mombasa,Kisumu	Paved	Road Durability	E) Structures	Expansion joints				224418.15	[delete]
[edit]	Nairobi,Mombasa,Kisumu	Paved	Road Durability	F) Road Furniture	Traffic Signals	(Unit)	68000	100	6800000	[delete]
[edit]	Nairobi,Mombasa,Kisumu	Paved	Road User Comfort	B) Pavement, Shoulders and ROW for Paved Roads	Height of shoulders vs. height of pavement	(Unit)	35	12222	427770	[delete]

[Create Output] [Back to Gateway] [Instructed Works] [Machinery Based Work Editor] [Quit]

Figure 0-5 Manage Estimations – Other PBC Works Editor

3.2.6 Instructed Woks

In addition to PBC Other Works, roads require various kinds of special works. iCOSTES refers to them as “Instructed works” and users can select necessary work items and input quantities and prices. Editor image is shown in Figure and the detail of each parameter is explained in **section 3.4 of the CEM II / CEM III**. If logging in as a Contractor, iCOSTES does not present default unit price. Therefore, users have to input unit price and quantities, or one set of lump-sum price.

COSTES Instructed Works Editor Home / Instructed Works / Index

Instructed Works Editor

Contract Information

Road Agency: KURA Project Term: 12 Month

Project Name: Test1 Month

Region: Nairobi,Mombasa,Kisumu Items in Year: Any Year

Work Category:

WorkItem: Mechanical Mowing

Price Input: Use Registered Unit Price

Item Quantity: Unit: Unit Price: Total Price:

[+ Save/Refresh](#)

Show 50 entries Search:

Action	Area	Category	Work Item	Unit	Quantity	Unit Price	Total Price		
	Nairobi,Mombasa,Kisumu	20. Road Furniture Repair And Maintenance	Electric Cable	m	1000	249	249000		
	Nairobi,Mombasa,Kisumu	09. Passage Of Traffic	Watchman	No	1	80000	80000		
	Nairobi,Mombasa,Kisumu	05. Earth Works	Cut To Spoil In Soft	m3	67890	150	10183500		
	Nairobi,Mombasa,Kisumu	04. Site Clearance And Topsoil Stripping	Mechanical Mowing	m2	700	3	2100		
							Total	10,587,412	

Showing 1 to 8 of 8 entries Previous Next

[Create Output](#)
[Other PBC Work Editor](#)
[Machinery Based Work Editor](#)
[Back to Gateway](#)
[Quit](#)

Figure 0-6 Manage Estimations – COSTES Instructed Works Editor

iCOSTES prepared editing window of Machinery based work items described **section 3.7 of the CEM II / CEM III and Part II of CSG.**

User's inputs for each work items are as follows

- Use This Item : Include selected item to for the calculation (Check Box)
- Simple or Actual: Simple Quantity Input (Unit quantity(generally per km, when the user belongs to the Road Agency) or Actual Quantity Input (selection and input)
- Actual Quantity : Numerical input (in case of Actual Quantity Input)
- Road Classification : Selection based on the maintenance grade (if alternatives have prepared)
- PBC Works Ratio: Default value is ready based on Road Classification, manual adjustment is possible
- Decision Ratio: Default value is ready based on Road Classification, manual adjustment is possible
- If logging in as a Contractor, user has to specify Unit Prices by themselves

Basic editing flow is based on the above input.

- "Facility Quantity", "Quantity", "Price Ksh", "Total Price" and
- Monthly unit price or "Per Month"

Are instantly and automatically calculated. Hence User can check how much the money is needed for the Machinery Based Items.

"PBCWorksRatio" and "DecisionRatio" are given based on the road condition but always adjustable.

Table is entire candidate work items is already given . Users select necessary items by **selecting subject row** as shown above and checking "Use it" checkbox. Users cannot edit table directly.

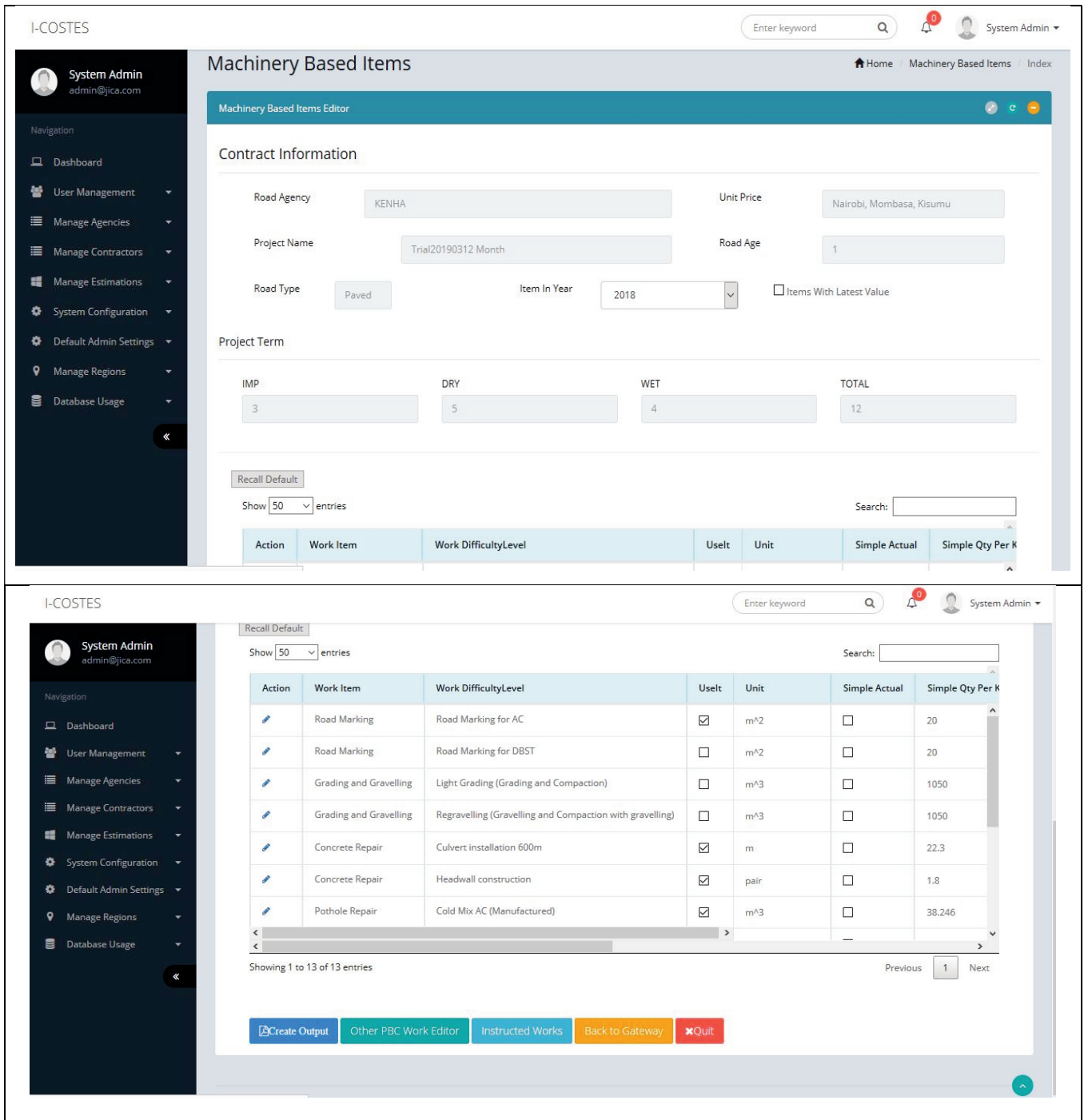


Figure 0-7 Manage Estimations –Machinery Based Items Editor

Road Marking

• **Cost Survey Guidenotes 2.4.3**

- Simple Quantity is given when the user belongs to the Road Agency
- Actual quantity: direct input is possible
- Road Classification : Grade (A or B) default value is given and adjustable

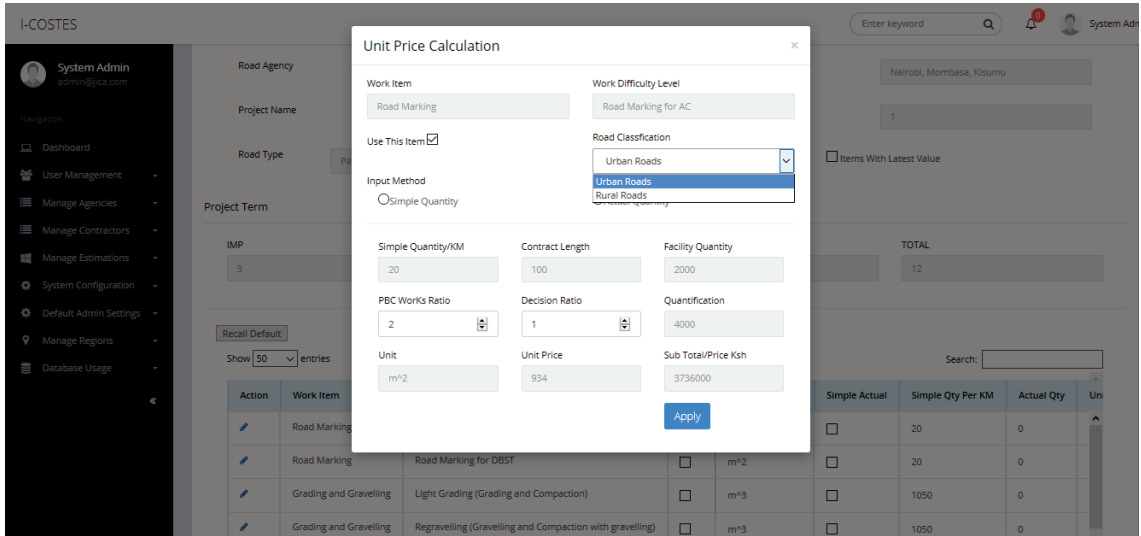


Figure 0-8 Manage Estimations –Machinery Based Items Editor - Road Marking

Grading and Graveling:

• **Cost Survey Guidenotes 2.2**

- Simple Quantity is given when the user belongs to the Road Agency
- Actual quantity: direct input is possible
- Road Classification : 2.0 is a default value for PBCWorksRatio, 0.0 is given for Decision Ratio.

Each Item is editable

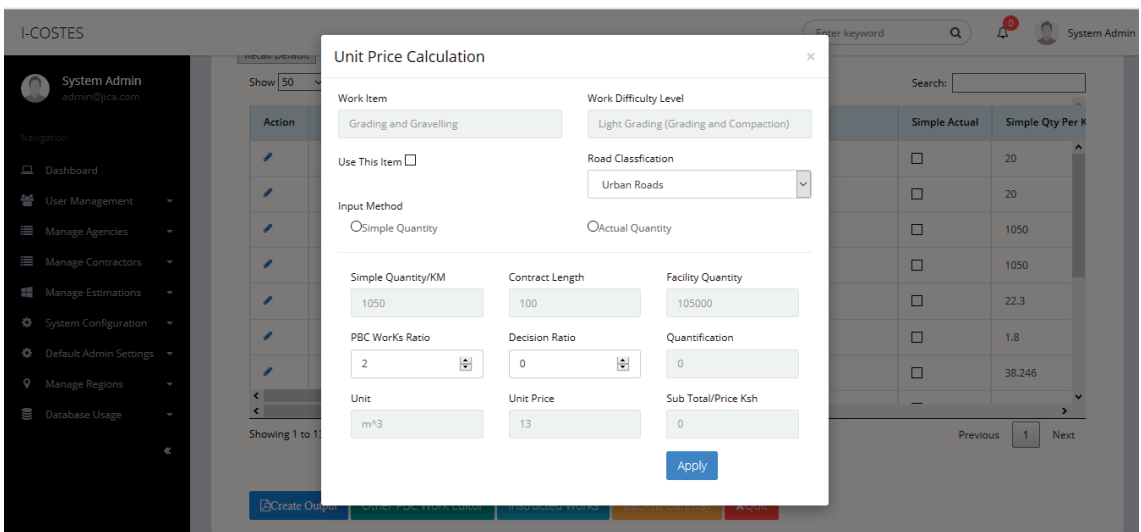


Figure 0-9: Manage Estimations –Machinery Based Items Editor - Grading and Graveling

Concrete Repair:

- **Cost Survey Guidenotes 2.1**
- Simple Quantity is given when the user belongs to the Road Agency
- Actual quantity direct input is possible
- Road Classification : default value is 0.01 for PBCWorksRatio, 1.0 for Decision Ratio respectively.

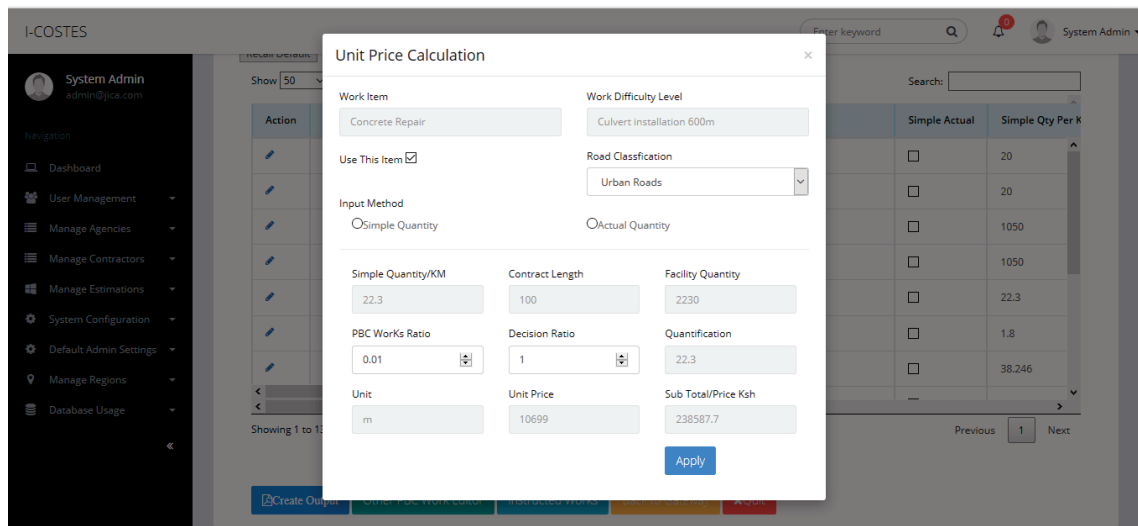


Figure 0-10 : Manage Estimations –Machinery Based Items Editor - Concrete Structure Repair

Pothole Patching:

- **Cost Survey Guidenotes 2.4.1**
- Simple Quantity is given when the user belongs to the Road Agency
- Actual quantity : direct input is possible
- Road Classification : automatically calculated based on road age. The result is presented in PBCRatio but adjustable. Contract terms have to be modified in the “Data Input” window.

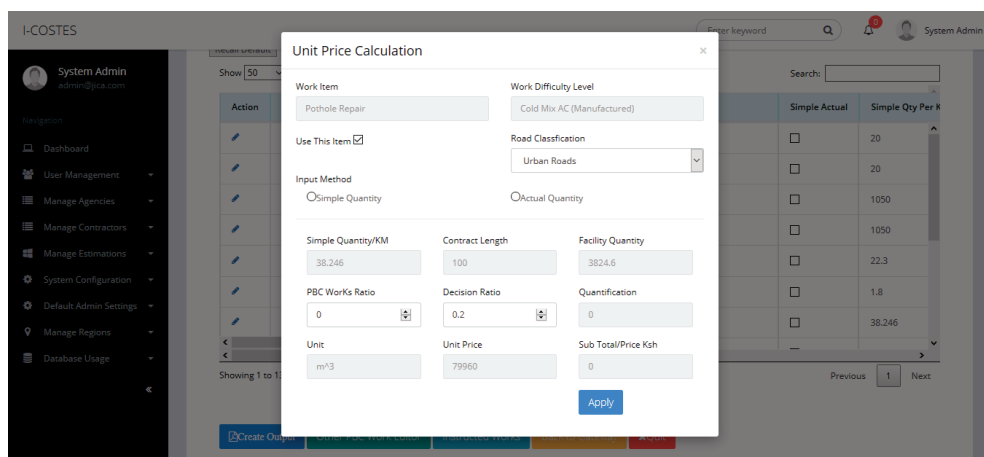


Figure 0-11 Manage Estimations –Machinery Based Items Editor - Pothole Repair

GuardRail:

- **Cost Survey Guidenotes 2.3.1**
- Simple Quantity is already given when the user belongs to the Road Agency
- Actual quantity is editable by input
- Road Classification: Road Grade (S,A,B or C) gives us each default value but editable.

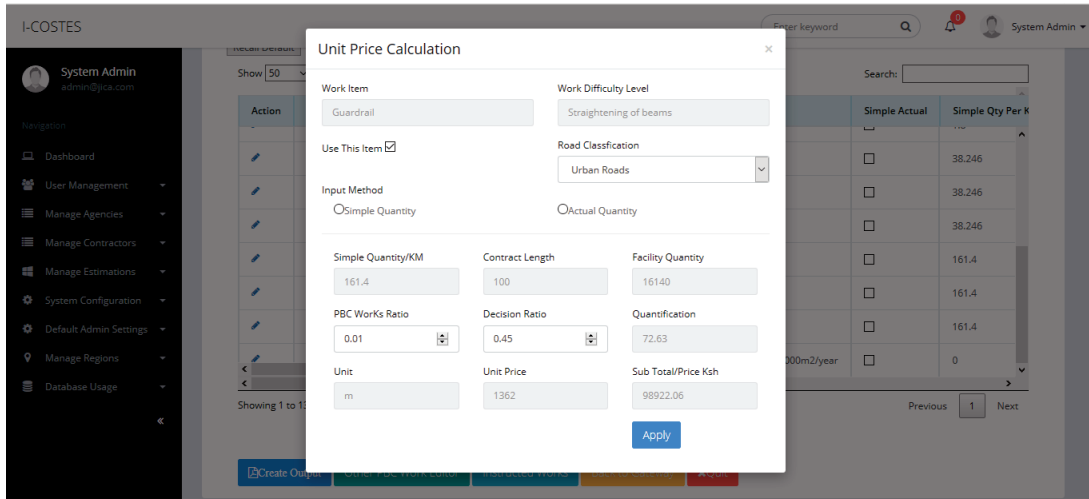


Figure 0-12 Manage Estimations –Machinery Based Items Editor - Guardrail Repair

CrackSealing:

- **Cost Survey Guidenotes 2.4.2**
- There is no Simple Quantity data. Users have to prepare Actual quantity if included in the calculation
- PBCRatio and Decision Ratio is zero therefore users have to prepare these coefficients

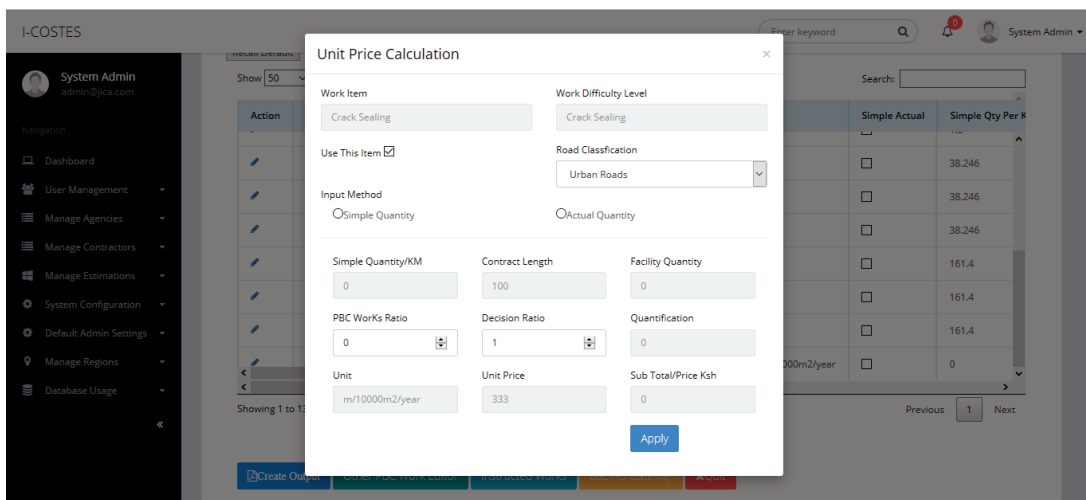


Figure 0-13 Manage Estimations –Machinery Based Items Editor - Crack Sealing

3.2.8 Create Output

By Clicking “Create Output”, Estimation book is generated automatically. Excel File will be provided via separate attached file via email (future option).

The detail of each parameter is explained in **chapter 4 of the CEM II / CEM III**.

3.2.9 View Estimation

This option provides a full list display of the already created estimations project name and provides the option to edit them. The list of the estimations that the user can view and edit depends on each user’s access level.

The screenshot displays the 'Estimations List' interface in the I-COSTES system. The page features a navigation sidebar on the left with options like Dashboard, User Management, and Manage Agencies. The main content area shows a table of estimations with the following data:

Action	Project Name	Ref Code	Agency Name	Region	Road Name	Length	DB Year	Input Method	IMP	WET Period	Dry Peri
Action	KURA SAMPLE PROJECT	50715	KURA	KURA	All other area			TEST ROAD	32	2017	ActualQu
Action	test road	50714	KURA	KURA	All other area			Kura test road	3	2017	ActualQu
Contract Window		50713	KURA	KURA	All other area			Kura test road	8	2017	ActualQu
SelfPatrol Window		50712	KURA	KURA	Nairobi, Mombasa, Kisumu			KURA TRIAL ROAD 1	41.3	2017	SimpleQu
Unit Price	E PROJECT	50712	KURA	KURA	Nairobi, Mombasa, Kisumu			KURA TRIAL ROAD 1	41.3	2017	SimpleQu
Other PBC Work Window		50711	KURA	KURA	Nairobi, Mombasa, Kisumu			WESTERN LINK ROAD	25	2017	Standardi
Instructed Work Window	INK ROAD	50711	KURA	KURA	Nairobi, Mombasa, Kisumu			WESTERN LINK ROAD	25	2017	Standardi
Machinery Based Items											
Generate PDF Reports	OAD										

Figure 0-14 Manage Estimations – Estimation List

3.2.10 Instructed Works Only

iCOSTES optionally provides the calculation system of only instructed works. This window is used to add instructed works only without PBC works. The user selects road agency, inputs the tender number, select the region as provided by the drop-down menu, mention the place of work, the road name, and select the database year. The user is then required to fill the Road information details. These are the Total length of the road in km, select the road type either paved or unpaved, age of the road, off carriage width in metres and the number of lanes it's made of.

Then the user provide the contract period details: Initial Mobilization Period in months, provide the dry period and the wet period in months, the IMP Method (either choose IMP has both IMP and WET period work or choose if it is only IMP Works) and then input the work frequency for dry period and also for the wet period in month(s) then save this input data by clicking the “save Input Data” button as illustrated below.

The detail of the input is explained in section “Instructed Works Editor”.

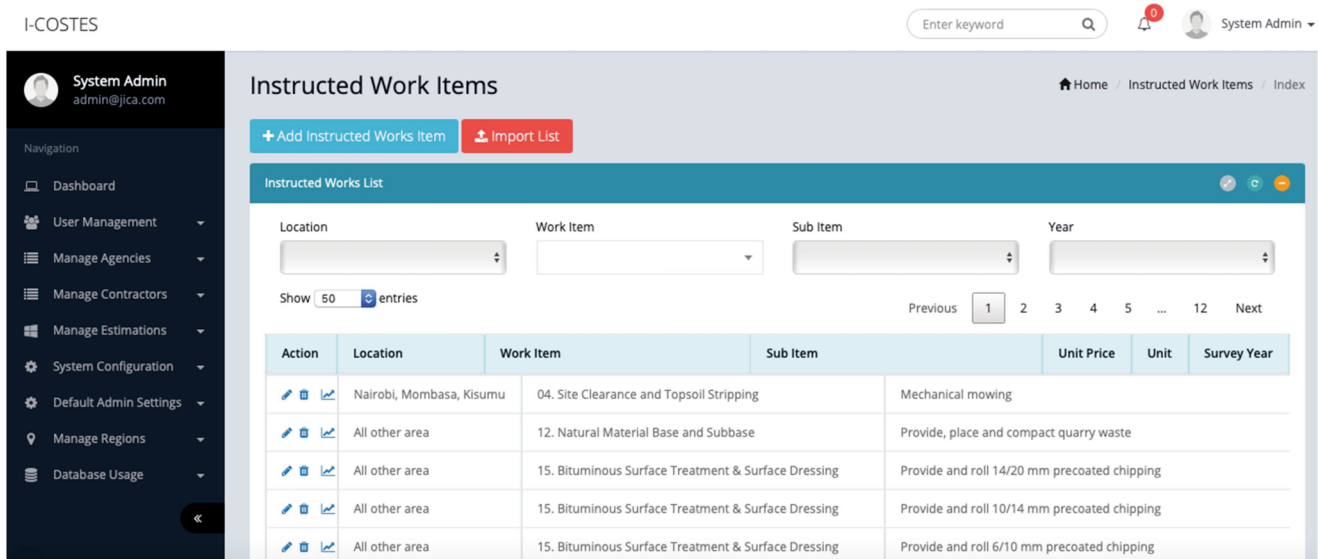


Figure 0-15 Manage Estimations – Instructed Works Only

4 DETAIL SYSTEMS STRUCTURE OF iCOSTES

4.1 ADMIN DASHBOARD

This involves defining and managing users, their roles and their access levels in the system. In iCOSTES our dashboard console provides the system administrators with high-level view of the system's user sessions, their login statuses, the privileges of each user, and their particular activity in the system.

In iCOSTES, the system admin dashboard has modules to manage the system users, manage agencies, manage the contractors, manage estimations, configure the system settings, default admin settings, manage regions and view the system database usage.

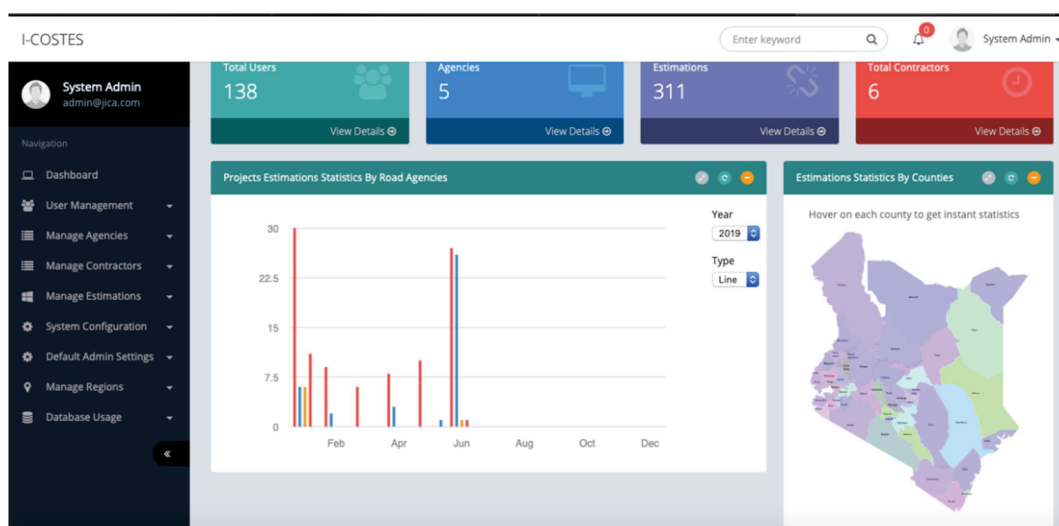


Figure 4.1- Administrator's Dashboard

4.2 USER MANAGEMENT

In this module, the system admin can add new user, view existing user accounts, add new role to the user accounts, view system roles and also the user statistics as shown below. The territory where each user can manage depends on the type of user.

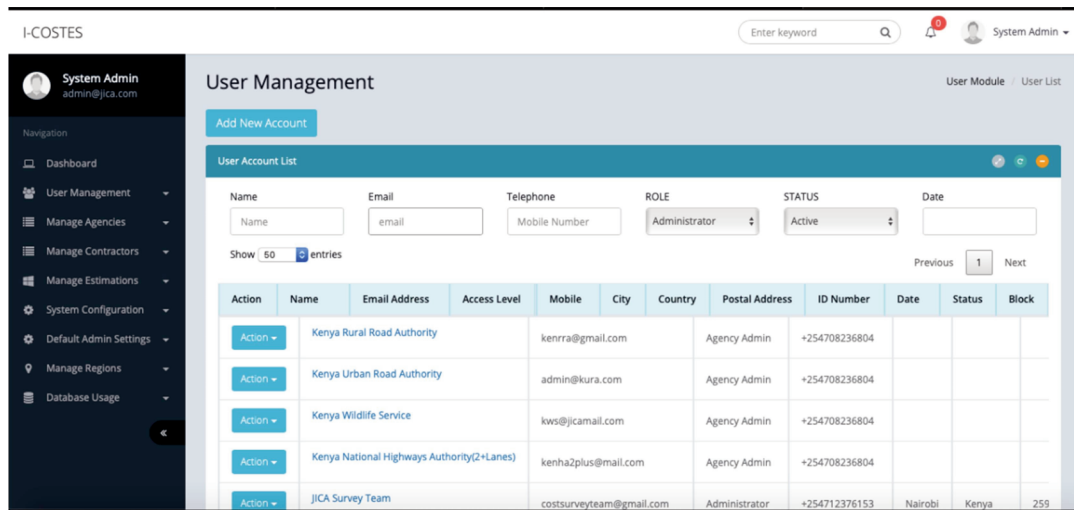


Figure 4.2- User Management

4.2.1 Adding new user

The admin feeds in the personal details of the new user as required; that is the name of the user, email address, telephone number, role of the new user and his password before clicking on create user button to create his account. This option is editable when logging in as a administrator or agency admin.

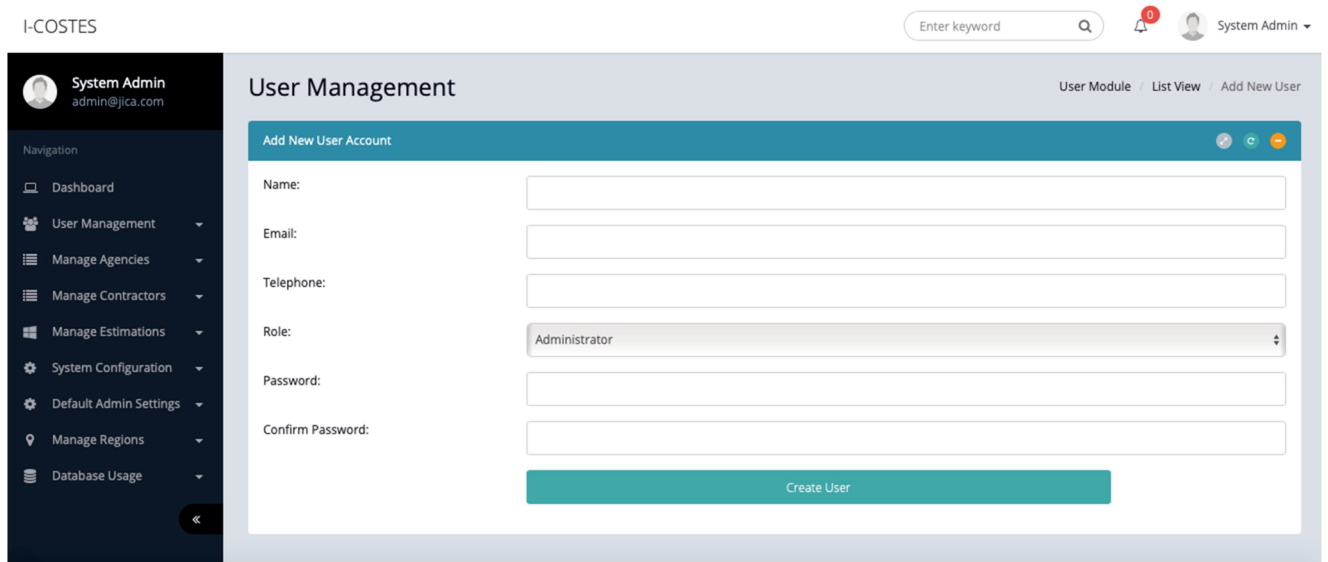
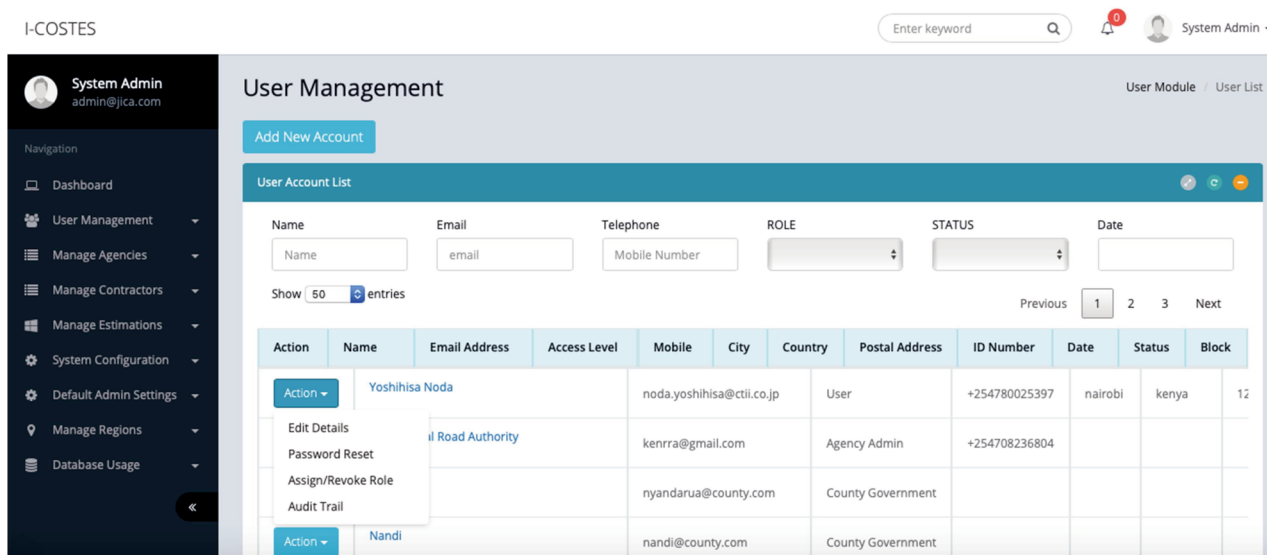


Figure 4-1 - User Management – Add New User Account

4.2.2 View User Accounts

Here the system admin is able to see a comprehensive list of the existing list of registered users, their personal details, their role and status. This option is editable when logging in as a administrator or agency admin.



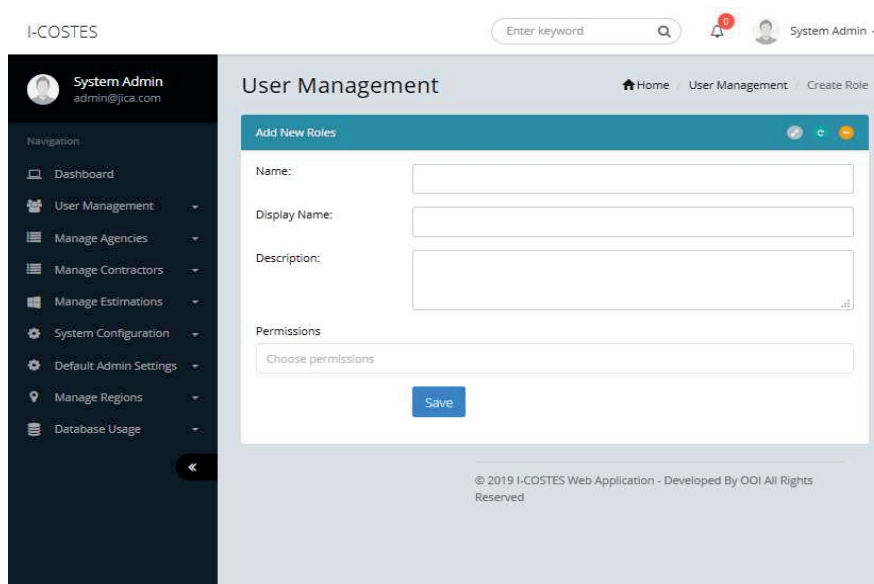
The screenshot shows the 'User Management' interface in the I-COSTES system. The page title is 'User Management' and the user is logged in as 'System Admin'. The interface includes a navigation menu on the left with options like Dashboard, User Management, Manage Agencies, etc. The main content area displays a 'User Account List' with a table of users. The table has columns for Action, Name, Email Address, Access Level, Mobile, City, Country, Postal Address, ID Number, Date, Status, and Block. The first user listed is Yoshihisa Noda, with email noda.yoshihisa@ctil.co.jp and role 'User'. A dropdown menu is open for the first user, showing options like 'Edit Details', 'Password Reset', 'Assign/Revoke Role', and 'Audit Trail'. The second user is Nandi, with email nandi@county.com and role 'County Government'.

Action	Name	Email Address	Access Level	Mobile	City	Country	Postal Address	ID Number	Date	Status	Block
Action	Yoshihisa Noda			noda.yoshihisa@ctil.co.jp		User		+254780025397	nairobi	kenya	12
Edit Details		il Road Authority		kenrra@gmail.com		Agency Admin		+254708236804			
Assign/Revoke Role				nyandarua@county.com		County Government					
Audit Trail											
Action	Nandi			nandi@county.com		County Government					

Figure 4-2 User Management – View User Account

4.2.3 Add New Role

Here you can add extra roles in the system by feeding in the Role's Name, its Display name, description and permissions then saving it by clicking the “save” button.



The screenshot shows the 'Add New Roles' form in the I-COSTES system. The page title is 'User Management' and the user is logged in as 'System Admin'. The form has fields for Name, Display Name, Description, and Permissions. The Permissions field is labeled 'Choose permissions'. A 'Save' button is at the bottom of the form. The footer of the page contains the copyright notice: '© 2019 I-COSTES Web Application - Developed By OOI All Rights Reserved'.

Figure 4-3 User Management – Add New Roles

4.2.4 System Roles

This feature shows all the saved system roles ranging from the Administrator role, agency admin role, contractors, county government, KRB Admin, Ministry admin, user roles and any other roles added by the system administrators. The search option at the top can be used to find in any role the user wants to see by using the roles keywords to search through the saved system roles then lists the search results.

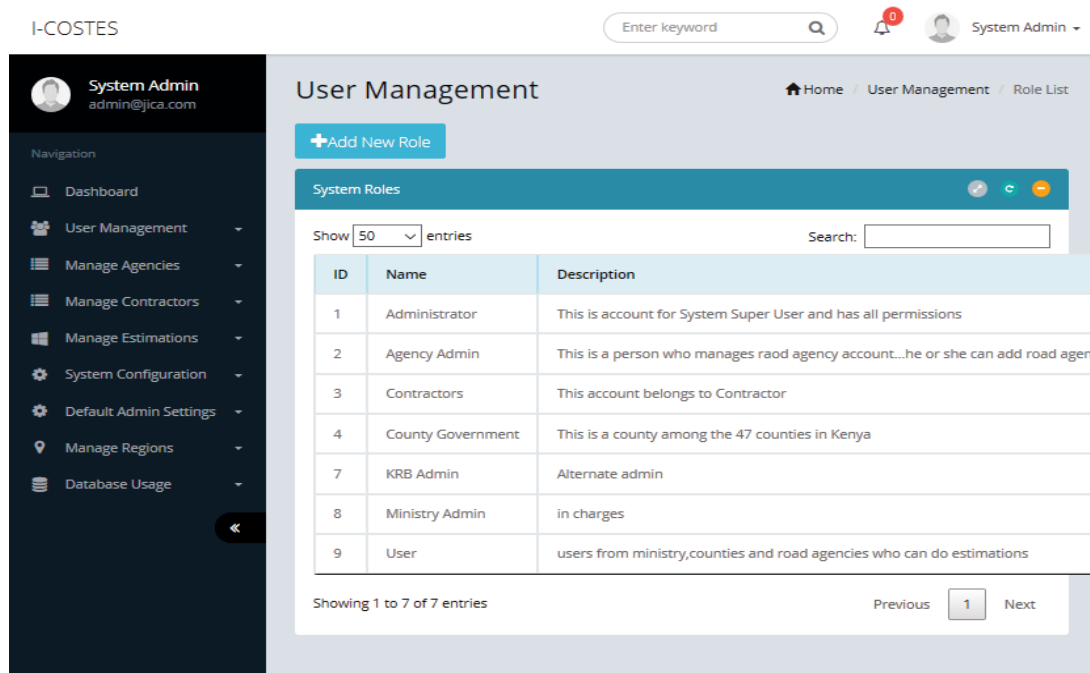


Figure 4-4 User Management – System Roles

4.2.5 User Statistics

This shows the system users’ registration statistics over a given duration of time; annually and/or monthly.

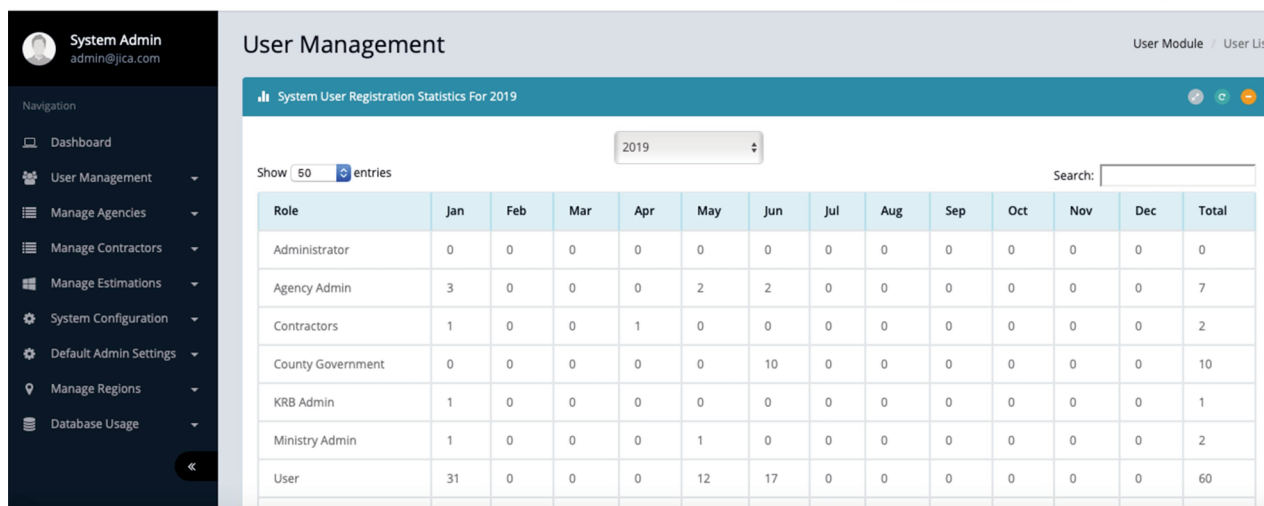


Figure 4-5 User Management – User Statistics

4.3 MANAGE AGENCIES

Here the system admin and agency admin can add new agencies, view existing list of road agencies, list of the available counties, agencies configuration and authorities' branches.

4.3.1 Add New Agencies

Here the user is required to enter the agency's details ranging from the agency full name, its abbreviation, email address, physical address, and telephone address etc. then go ahead and provide the agency settings before actualizing the account creation. As for the detail of each parameters, please refer **pp. 53 of the CEM Vol.1**.

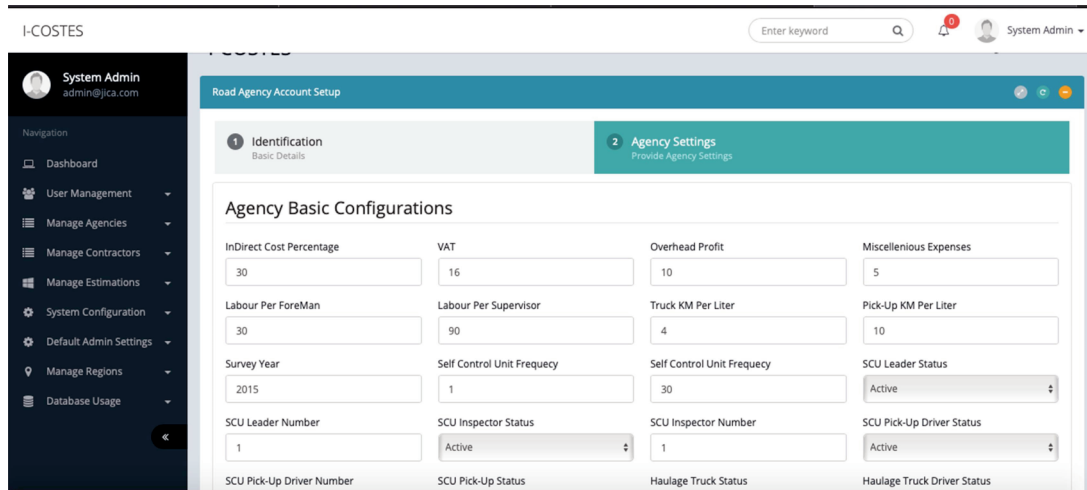


Figure 4-6 Manage Agencies – Add New Agencies

4.3.2 List of Agencies

Here the user is able to see the full list of all the already registered road agencies in the system and their basic details. The admin is also able to search the list by providing their keywords for instance the name of the authority body or its Abbreviation or the telephone number or any basic details the admin has about the road agency. The admin can also edit these registered road agencies by clicking the action drop down button to edit that particular road authority account.

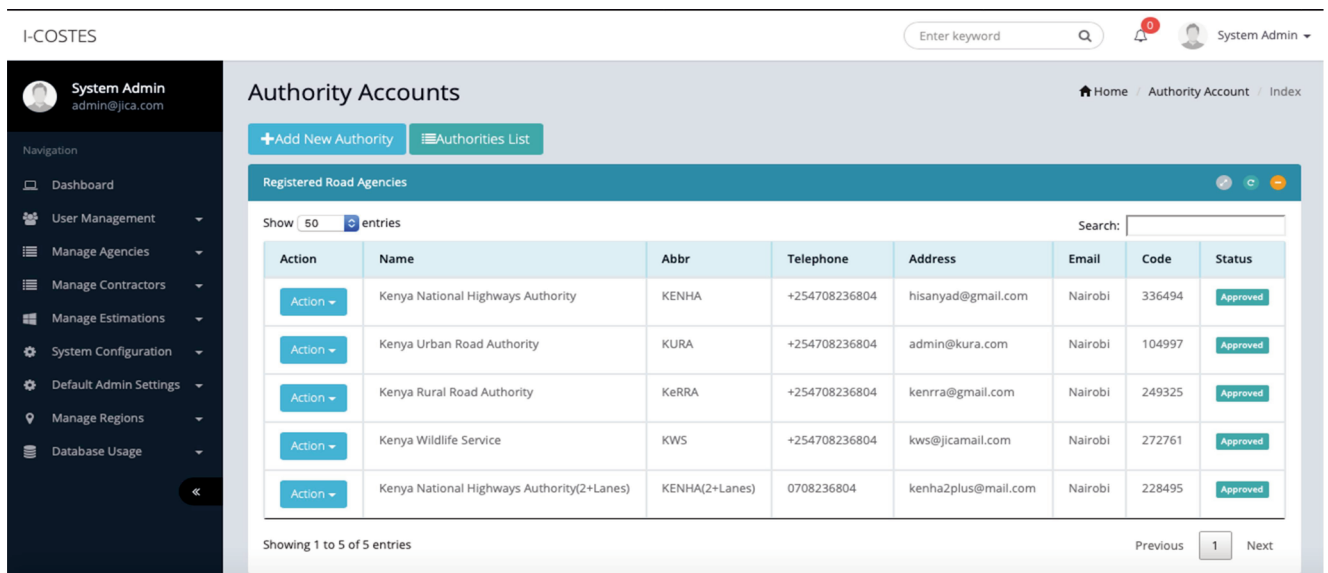


Figure 4-7 Manage Agencies – List of Agencies

4.3.3 List of Counties

This shows list of all the available counties in the country, their capital towns and their account statuses.

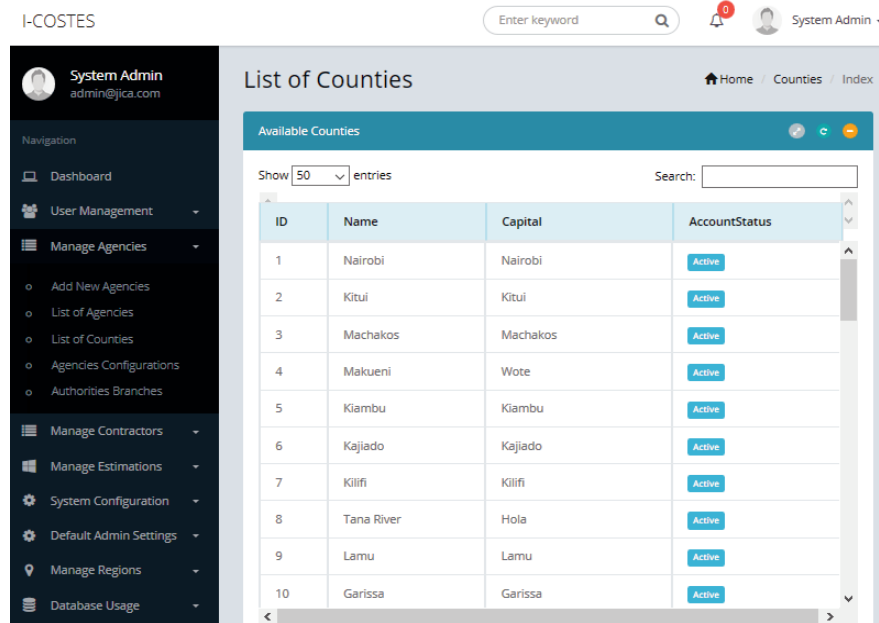


Figure 4-8 Manage Agencies – List of Counties

4.3.4 Agencies Configurations

This feature shows main system configuration by individual road agencies and new agency settings can be added by choosing the “Add New Settings” button at the top. As for the detail of each parameters, please refer **pp. 53 of the CEM Vol.1**.

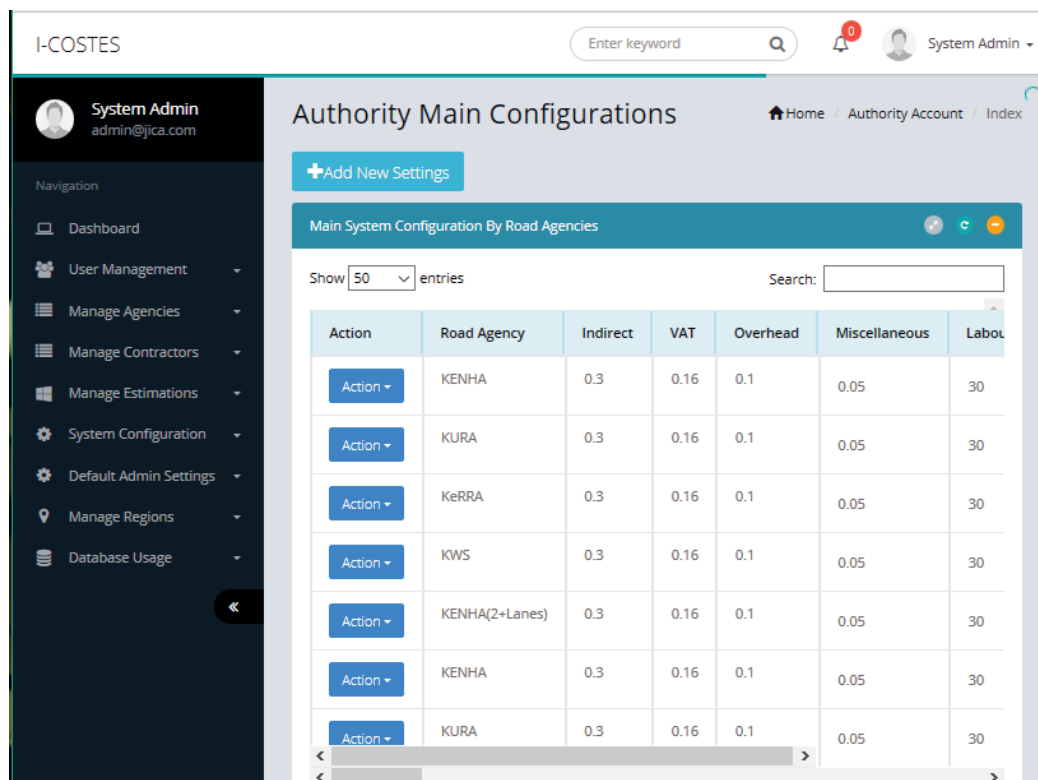


Figure 4-9 Manage Agencies – Agency Configurations

4.3.5 Create New Agency Configurations

Here the system user is allowed to enter new agency configurations by feeding in its details and saving them into the system using “save details” button.

In this phase the admin is allowed to select the road agency then feed in the corresponding rates(indirect cost percentage, VAT, Overhead profit, miscellaneous expenses, labour per foreman, labour per supervisor, truck KM per litre, Pick-up KM per litre, the survey year, set the control unit frequency, SCU Leader status, SCU Leader number, SCU Inspector status, SCU Inspector number, SCU Pick-up driver status and number, SCU Pick up status, Haulage truck status and number, haulage pick-up status, haulage pick-up driver status and number and lastly haulage working days per month) the admin can then choose where to generate an excel output or not and also whether they generate PDF Output or not then they save the details.

The screenshot displays the 'Create New Configurations' interface in the iCOSTES system. The page title is 'Create New Configurations' and the sub-header is 'Add New Agency Settings'. The form is organized into a grid of input fields:

- Road Agency:** A dropdown menu with the option '--Select Road Authority--'.
- Indirect Cost Percentage:** Text input field containing '30'.
- VAT:** Text input field containing '16'.
- Overhead Profit:** Text input field containing '10'.
- Miscellaneous Expenses:** Text input field containing '5'.
- Labour Per ForeMan:** Text input field containing '90'.
- Labour Per Supervisor:** Text input field containing '30'.
- Truck KM Per Liter:** Text input field containing '4'.
- Pick-Up KM Per Liter:** Text input field containing '10'.
- Survey Year:** Text input field containing '2019'.
- Self Control Unit Frequency:** Text input field containing '4'.
- Self Control Unit Frequency:** Text input field containing '30'.
- SCU Leader Status:** Dropdown menu with 'Active' selected.
- SCU Leader Number:** Text input field containing '1'.
- SCU Inspector Status:** Dropdown menu with 'Active' selected.
- SCU Inspector Number:** Text input field containing '1'.
- SCU Pick-Up Driver Status:** Dropdown menu with 'Active' selected.
- SCU Pick-Up Driver Number:** Text input field containing '1'.
- SCU Pick-Up Status:** Dropdown menu with 'Active' selected.
- Haulage Truck Status:** Dropdown menu with 'Active' selected.
- Haulage Truck Driver Status:** Dropdown menu with 'Active' selected.
- Haulage Truck Driver Number:** Text input field containing '1'.
- Haulage Working Days Per Month:** Text input field containing '25'.
- Generate Excel Output:** Dropdown menu with 'Active' selected.
- Generate PDF Output:** Dropdown menu with 'Active' selected.

A 'Save Details' button is located at the bottom right of the form area. The user interface includes a navigation sidebar on the left with options like Dashboard, User Management, Manage Agencies, etc., and a top navigation bar with a search bar and user profile 'System Admin'.

Figure 4-10 Manage Agencies – Create New Agency Configurations

4.3.6 Authorities Branches

This displays a list of all the authority’s branches registered and their locations as shown below.

I-COSTES Enter keyword System Admin

System Admin
admin@jica.com

Navigation

- Dashboard
- User Management
- Manage Agencies
- Manage Contractors
- Manage Estimations
- System Configuration
- Default Admin Settings
- Manage Regions
- Database Usage

Branches

Home / Branches / Index

Branches

Show entries Search:

Authority	Name	Daten Created
Kenya National Highways Authority	Nairobi	2018-02-24 08:26:17
Kenya National Highways Authority	Mombasa	2018-02-24 08:26:17
Kenya National Highways Authority	Nakuru	2018-02-24 08:26:17

Showing 1 to 3 of 3 entries Previous Next

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Figure 4-11 Manage Agencies – Authority Branches

4.4 MANAGE CONTRACTORS

This module allows the admin to create a new contractor account and/or view a list of all the existing contractors.

4.4.1 Add New Contractor

Here the admin first has to feed in the contractors basic details which are the License number, telephone number and their email address for identification purposes before proceeding to next to add their contact information on how they can be contacted, then save to create the contractor's account.

The screenshot displays the 'Manage Contractors' interface. On the left is a dark sidebar with a navigation menu including Dashboard, User Management, Manage Agencies, Manage Contractors, Manage Estimations, System Configuration, Default Admin Settings, Manage Regions, and Database Usage. The main content area has a header with '+Add New Contractor' and 'Contractor List' buttons. Below this is a 'Registered Contractors' section with a search bar and a table of contractors.

Name	Telephone	Address	Email
BTA	123456	martrin.njoroge31@yahoo.com	NAIROBI
Dreambuild Engineering Co. Ltd	+254721137789	dreambuildeng@gmail.com	Starehe
Isanya Hillary	+254708236804	isanyad@outlook.com	Kitale
Test Company	+254708236804	admin@nrf.com	PLOT NO. 209/333 NGONG ROAD
Test Compnay	+254708236804	testcon@gmail.com	Nairobi
Test Organization	+254708236804	hisanyad@gmail.com	KENYA-RE TOWERS, OFF RAGATI ROAD, LR. NO. 209/11260, KENYA-RE TOWERS, UPP

Figure 4-12 Manage Contractors – Add New Contractor

4.4.2 Contractors List

Clicking on contractor list shows display of all the already existing contractors that have already been registered with the ICOSTES system.

The administrator can also search through the list of the registered contractors list using their details as the keywords to get the related display of the desired contractors list. For instance searching “Nairobi” will display all the contractors located in Nairobi.

I-COSTES Enter keyword System Admin

System Admin
admin@jica.com

Navigation

-
-
-
-
-
-
-
-
-

Manage Contractors

[Home](#) / [Contractors](#) / [Index](#)

Registered Contractors

Show entries Search:

Name	Telephone	Address	Email
BTA	123456	martrin.njoroge31@yahoo.com	NAIROBI
Dreambuild Engineering Co. Ltd	+254721137789	dreambuildeng@gmail.com	Starehe
Isanya Hillary	+254708236804	isanyad@outlook.com	Kitale
Test Company	+254708236804	admin@nrf.com	PLOT NO.
Test Compnay	+254708236804	testcon@gmail.com	Nairobi
Test Organization	+254708236804	hisanyad@gmail.com	KENYA-RE

Showing 1 to 6 of 6 entries Previous Next

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Figure 4-13 Contractors List

