

COMFAR *III Expert*
COMFAR *III Business Planner*
for Windows

TUTORIAL MANUAL

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION





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VIENNA, 2003



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I. INTRODUCTION

COMFAR *III Expert* is a computer program which supports project pre-investment studies. It facilitates data organization, computations and the production of pro-forma reports on financial and economic performance.

This manual of case studies complements the other documentation for COMFAR and is particularly intended for use in conjunction with the COMFAR *III Expert Reference Manual* (the *Reference Manual*). Its purpose is to explain the procedures for completing the entry of financial and economic data for a project and for producing numerical schedules and graphical charts.

The manual may be used for COMFAR *III Expert* as well as COMFAR *III BusinessPlanner*. Since COMFAR *III BusinessPlanner* does not facilitate a module for *Economic analysis*, the respective chapters covering the use of this module are not applicable for COMFAR *III BusinessPlanner*. Later, the *Tutorial Manual* will always refer to COMFAR *III Expert*.

Three cases are presented. The first, a **Tomato Canning Project** (TOMCAN.C30), is intended to demonstrate the main financial features of the program and includes a procedure for using COMFAR for developing a plan for financing a project. The others have been adapted to include more extensive features of the program than the originals. The case of **Growmania Garments, Ltd.** (GROWMAN.C30) is an export-oriented project, adapted from the case described in annex A of the *Manual for the Preparation of Industrial Feasibility Studies* (UNIDO publication, Sales No. E.91.III.E.18), hereinafter referred to as the *Industrial Feasibility Studies Manual*. This project is analyzed at the opportunity level. The third case, the **Sahara Textile Mills** (SAHARA.C30), is derived from a set of training materials prepared by UNIDO, Investment and Technology Promotion Division, Feasibility Studies Branch.

Each of the last two cases includes both financial and economic analysis. In COMFAR financial analysis is performed as a minimum. The value-added method of economic analysis is included in the Growmania Garments case, and economic appraisal (economic cost-benefit analysis) in the Sahara Textile case. For the last two cases the financial analysis is carried out in the files GROWMAN1 and SAHARA1, financial and economic analysis is carried out in the files GROWMAN2 and SAHARA2.

A new user of COMFAR *III Expert* can benefit from execution of each of these cases. Some of the skills to be developed in the process are:

- Starting COMFAR *III Expert*
- Developing the data structure for the project, including the selection of items for cost-benefit analysis
- Organizing and entering financial and economic data
- Selecting program output (results) in the form of numerical schedules and graphs
- Printing numerical schedules and graphs
- Performing sensitivity analysis for project parameters
- Comparing pro-forma results for project alternatives

Experienced users may find a review of these cases useful for clarifying points concerning the model underlying the program.

The project files for the three cases are included in the COMFAR III Expert package.

COMFAR III Expert operates in a graphical environment. A graphical user interface (GUI) comprises a set of screen displays that facilitate user/program interactions. The basis for the operational descriptions in this *Manual* is Microsoft Windows 95.

In addition to the GUI, an internal command structure, available through the COMFAR menu and menu items, is used to initiate and execute program features.

Depending on the user's experience it is recommended to review chapters IV and V in the *Reference Manual*.

A few points concerning the relation between data entered for financial analysis and economic analysis are important for assuring compatibility and completeness of the data:

- In the ADJUSTMENT windows of the economic browser, the TAXES/DUTIES INCLUDED (subsidies can be entered as a negative tax) are used only in value-added distribution analysis. These entries do not affect the cost-benefit analysis in any way. If taxes and/or duties are included in the value of an input and are to be excluded for purposes of cost-benefit analysis, the ADJUSTMENT FACTOR for the item must take this into account.
- The financial price at the earliest chronological appearance is used as the basis for the ADJUSTMENT FACTOR (AF) and the ADJUSTED MARKET VALUE (AMV) in the cost-benefit analysis. For this reason it is advisable to use the STANDARD input mode for financial entries in all cases involving cost-benefit analysis rather than the QUANTITY = 1 or PRICE = 1 input modes (set in the **Default** feature of the EDIT menu). The price of each item, particularly those to be transferred to the economic browser for price adjustments, should always be specified rather than using QUANTITY or PRICE to define the entire value. When only one of an item is included in the project it is best to define the quantity as 1 and the actual price.

None of the cases included in this *Manual* is intended to represent actual or projected operating conditions for the type of enterprises involved.

II. TOMATO CANNING

This exercise is intended to introduce a new user to the basic concepts and procedures of COMFAR *III Expert*. Only financial analysis is performed. Data are kept to a minimum to concentrate on the main features of the program. The program features which are not used in this case study are not explained here. Please refer to the *Reference Manual*.

The project is a new enterprise to produce and export a maximum of 2,600 tons of canned tomato at a price of US\$ 100 per ton. The project financial structure involves a single class of equity shares and a loan provided by a development bank.

The objective of the exercise is to produce the following pro-forma financial statements and performance indicators:

- Net income statement
- Cash flow for financial planning
- Discounted cash flow, total capital invested, NPV, NPVR, IRR, Modified IRR
- Discounted cash flow, total equity invested, NPV, IRR, Short NPV, Modified IRR
- Break-even point, third year of production
- Projected balance sheet
- Ratios

Data concerning all aspects of the project including currency exchange rates, initial fixed investment, production costs, sales programme, working capital requirements and financial conditions are provided in the appropriate sections below.

Note: Every save operation (**Save Project as** in the FILE Menu) in this manual is described using names equal to the project files delivered with COMFAR *III Expert*. If you do not want to overwrite these original project files, please use other filenames as described in this manual (e.g.: TOMATO instead of TOMCAN).

A. START COMFAR

The procedure for starting COMFAR is described in chapter III in the *Reference Manual*. When COMFAR is started, the browser and browser overview panels are displayed with the menu bar at the top of the window.

B. SELECT PROJECT TYPE AND LEVEL OF ANALYSIS

1. Choose **New Project** in the FILE menu. The NEW PROJECT modal window is displayed.
2. Select **Industrial** in the PROJECT TYPE list box.
3. Select the **Opportunity study** radio button.
4. Choose the **OK** pushbutton.

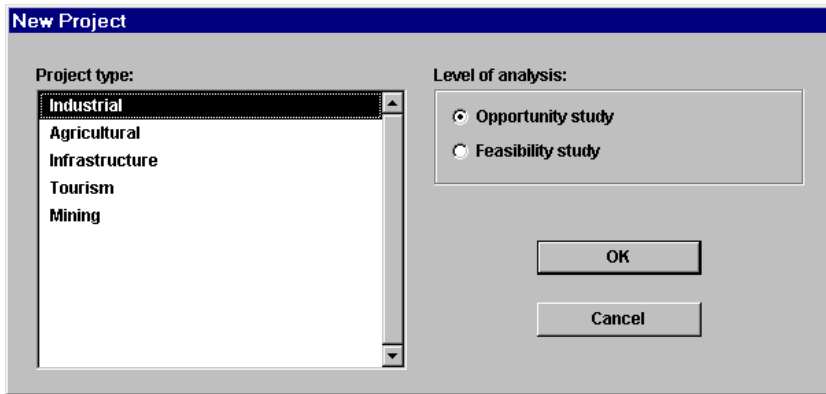


Figure 1: New project modal window

The PROJECT INPUT DATA node is displayed with the Compress Icon at the right, indicating that the node is extended. The initial data entry sequence starts with the PROJECT IDENTIFICATION node, which is also displayed. This sequence involves from five to eight nodes depending upon the complexity of the analysis, each of which is displayed only after data in the previous node are accepted (with **OK**). The specific number of nodes in the sequence is determined by the project features selected in the PROJECT IDENTIFICATION window.

C. FINANCIAL DATA ENTRY

The first version of the data file does not include the plan for financing the project. The program is used to assist in determining an appropriate plan.

1. Project identification

1. Move the mouse cursor inside the browser overview frame. The cursor changes to the move cursor. Drag the frame so that the PROJECT INPUT DATA node and PROJECT IDENTIFICATION node are displayed in the browser.

The purpose of this step is to become familiar with the use of the browser overview frame for viewing segments of the browser. Alternatively, the browser position can be altered by placing the cursor within the browser, clicking and holding the left mouse button. When the hand cursor appears, the viewing position in the browser is changed by moving the mouse. When in an acceptable position, release the mouse button.

2. Choose the Table Icon for the PROJECT IDENTIFICATION node. The PROJECT IDENTIFICATION window is displayed.

The screenshot shows a software window titled "COMFAR III Expert - [Project identification - Project1. (Industrial)]". The window has a menu bar with "File", "Module", "Edit", "Display", "Print", "Graphics", "Project", "SHARE", and "?". Below the menu bar is a toolbar with various icons. The main area of the window is divided into several sections:

- Project title:** A text box containing "Tomato canning".
- Project description:** A large text area containing the text: "Project of _____ (sponsor) to produce 2,600 tons canned tomato per annum for export to _____. Located at _____. This version does not include the finance plan."
- Date and time:** A text box containing "31 July 1995".
- Project classification:** A group box containing three radio buttons: "New project" (selected), "Expansion/rehabilitation project", and "Joint-venture project".
- Depth of analysis:** A group box containing two checkboxes: "Financial analysis" (checked) and "Economic analysis" (unchecked). Below these checkboxes is a button labeled "Special features...".

At the bottom of the window are two buttons: "OK" and "Cancel".

Figure 2: Project identification window

3. Select the PROJECT TITLE entry field and enter the name of the project, **Tomato canning**.
4. Select the PROJECT DESCRIPTION multiple-line entry field and enter descriptive text for the project, for example: Project of ____ (sponsor) to produce 2,600 tons canned tomato per annum for export to _____. Located at _____. This version does not include the finance plan.
5. Select the DATE AND TIME entry field and enter the date and time as text.
6. The **New project** radio button is selected by default.
7. The FINANCIAL ANALYSIS check box is selected by default. Economic analysis and special features are not used in this case study.
8. Choose the **Special features** pushbutton. The SPECIAL FEATURES modal window is displayed.
9. Accept the defaults in the SPECIAL FEATURES modal window with the **OK** pushbutton. Control returns to the PROJECT IDENTIFICATION window.

Special features

☐ Cost centre analysis

☐ Cost allocation

☐ Inflation

☐ Revaluation of fixed assets

Escalate first year: time(s)

Stock model:

Note: According to the UNIDO Manual for the Preparation of Industrial Feasibility Studies (newly revised and expanded edition) it is recommended to apply cost allocation in combination with cost centre analysis.

Figure 3: Special features modal window

2. Planning horizon

The planning horizon comprises two years of construction and five years of production. Planning during construction is yearly.

1. Choose the Table Icon for the PLANNING HORIZON node. The PLANNING HORIZON window is displayed. The insertion point is located by default in the BEGIN field of the CONSTRUCTION PHASE panel.

Fields are most easily traversed using [TAB] but can also be selected with the mouse. Data entries in fields are most readily accepted with [ENTER] or by selecting another field with the mouse.

2. Select **12** in the MONTH OF BALANCE drop-down list box (12 is the default value).
3. Enter the beginning date, **1/1**, in the BEGIN field of the CONSTRUCTION PHASE panel.
4. Enter **2** in the LENGTH-YEARS field.

Figure 4: Planning horizon window

5. Leave the value **0** in the MONTHS field.

The END field in the CONSTRUCTION PHASE panel automatically displays the end date **12/2**, (the last day of December, year 2). The BEGIN field

in the PRODUCTION PHASE panel automatically displays the beginning date of the production phase, 1/3 (first day).

6. Enter **5** in the LENGTH-PERIODS field of the PRODUCTION PHASE panel. The project **End** date is automatically displayed (**12/7**). A **Reference date** can be selected as the last day of any production phase period. The reference date is significant for calculating representative results, such as break-even. It should, therefore, be a year of full operations. In this case, the date 12/5 is selected.
7. Choose **12/5** in the REFERENCE YEAR drop-down list box.
8. Choose **OK** in the PLANNING HORIZON window. Control returns to the browser. The PRODUCTS node is displayed.

3. Products

The planned product is canned tomatoes, all of which is to be exported. The maximum sales are expected to be 2,600 tons per annum with an FOB price of US\$ 100 per ton.

1. Choose the Table Icon for the PRODUCTS node. The PRODUCTS window is displayed. For a new project, COMFAR offers one product named "Product #".

COMFAR III Expert - [Products - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Edit:

Number: 1

Name: Canned tomato

Actual start of production: 1/3

Actual end of production: 12/7

Nominal capacity: 2,600.00

New

Delete

Edit

Accept Edit

	Name	Start	End	Nominal capacity
1	Canned tomato	1/3	12/7	2,600.00

OK Cancel

Figure 5: Products window

2. Choose the **Edit** pushbutton to sequentially enter in the EDIT panel the **Name**, **Actual start of production (1/3)**, **Actual end of production (12/7)** and **Nominal capacity** as specified above.
3. Choose the **Accept Edit** pushbutton to transfer the entries to the PRODUCTS list box.
4. Choose **OK** in the PRODUCTS window. Control returns to the browser. The CURRENCIES node is displayed.

4. Currencies

The local currency is thousand rupees. The export currency is thousand US dollars with an official exchange rate 5 rupees per US\$. All reports are expressed in the accounting currency, thousand rupees.

1. Choose the Table Icon for the CURRENCIES node. The CURRENCIES window is displayed. For a new project, COMFAR offers the local currency as defined in the DEFAULTS modal window (*Reference Manual*, chapter V.C).

COMFAR III Expert - [Currencies - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Edit:

Type: Foreign

Name: thousand US dollars

Abbreviation: US\$

Exchange rate: 1.0000 US\$ = 5.0000 Rs

Accounting currency:

Name: thousand rupees

Units: Absolute

Buttons: New, Delete, Edit, Accept Edit, Select, Reference...

	Name	Abbr.	Exchange rate
Local	thousand rupees	Rs	
Foreign	thousand US dollars	US\$	1.0000 US\$ = 5.0000 Rs

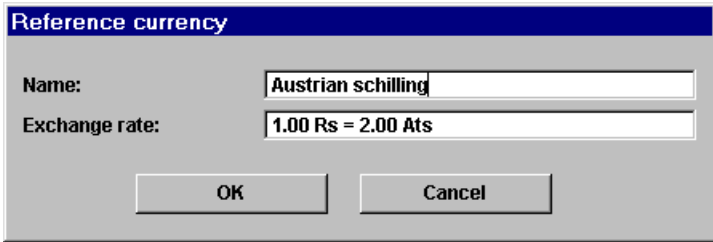
Buttons: OK, Cancel

Figure 6: Currencies window

2. Choose the **Edit** pushbutton to sequentially enter in the EDIT panel the **Name** (thousand rupees) and the **Abbreviation** (Rs) of the local currency. In this case EXCHANGE RATE field is inactive. TYPE is a display field only (local or foreign).
3. Choose the **Accept Edit** pushbutton to transfer the entries to the CURRENCIES list box.
4. Choose the **New** pushbutton to sequentially enter in the EDIT panel the **Name** (thousand US dollars), the **Abbreviation** (US\$) of the foreign currency and the **Exchange rate** (1 US\$ = 5 Rs) for the foreign currency.
5. Choose the **Accept Edit** pushbutton.
6. Select the accounting currency. (The local currency is selected by default; if not, the following steps would be carried out: First select **thousand rupees** in the CURRENCIES list box and then choose the **Select** pushbutton; the selected currency is displayed in the ACCOUNTING CURRENCY field.)
7. Use the UNITS drop-down list box to select **Absolute** as the accounting unit. (The accounting currency is already expressed in thousands of units.)

The reference currency and exchange rate are defined as text only. Their purpose is to provide an easy reference for conversion of units expressed in the accounting or other currency. This information appears only in the SUMMARY schedule. In this case the Austrian schilling is the reference currency.

8. Choose the **Reference** pushbutton. The REFERENCE CURRENCY modal window is displayed.



The screenshot shows a modal window titled "Reference currency". Inside the window, there are two labeled text input fields. The first field, labeled "Name:", contains the text "Austrian schilling". The second field, labeled "Exchange rate:", contains the text "1.00 Rs = 2.00 Ats". Below these fields, there are two buttons: "OK" and "Cancel".

Figure 7: Reference currency modal window

9. Select the NAME field and enter **Austrian schilling**.
10. Select the EXCHANGE RATE field and enter **1 Rs = 2 Ats**
11. Choose the **OK** pushbutton in the REFERENCE CURRENCY window. Control returns to the CURRENCY window.
12. Accept the selections with the **OK** pushbutton in the CURRENCY window. Control returns to the browser. The DISCOUNTING node is displayed.

5. Discounting

The opportunity cost of capital for the total investment and for the equity is 12%. To determine the MIRR the reinvestment and borrowing rates are assumed to be 12% and 8%, respectively, for both the total investment and equity. The number of years for the Short NPV on equity is 5.

1. Choose the Table Icon for the DISCOUNTING node. The DISCOUNTING window is displayed.
2. Select the **Discounting** tab (it should already be selected by default). The DISCOUNTING list box appears in the window.

COMFAR III Expert - [Discounting - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Net present values discounted to:

☐ End of first year (=12/1) ☒ Beginning of first period (=1/1)

IRR: 5

Discounting Modified Internal Rate of Return

	Rate (%)	Length (years)
Total investment	12.00	7
Total equity capital	12.00	5

OK Cancel

Figure 8: Discounting window

3. Enter for TOTAL INVESTMENT 12% for the **Rate** and for TOTAL EQUITY CAPITAL 12% and 5 (years) for **Rate** and **Length**. (see *Reference Manual*, chapter IV.3).
4. Select the **Modified Internal Rate of Return** tab. The MODIFIED INTERNAL RATE OF RETURN list box appears in the window.
5. Enter 12% as the **Reinvestment rate** and 8% as the **Borrowing rate** for TOTAL INVESTMENT and for TOTAL EQUITY CAPITAL.

6. Select the **Beginning of first period** radio button. All values are to be discounted to the beginning of the project.
7. Accept the selections with the **OK** pushbutton. The nodes for the remaining standard structure are displayed in the browser.

6. Fixed investment costs

Fixed investment costs are defined in the windows corresponding to subnodes of the FIXED INVESTMENT COSTS node.

- Choose the Extend Icon of the FIXED INVESTMENT COSTS node.

The structure of fixed investment costs is displayed with a node for each cost category included in the standard structure. To center those nodes on the screen, alter the position of the browser (see chapter II.C.1).

Fixed investment costs are shown in table 1 with depreciation conditions, scrap value and the investment in each of the two years of construction.

	MARKET	CURRENCY (thousands)	NO. YEARS DEPRECIATION ^a	SCRAP- VALUE ^a	COSTS, PROJECT YEAR	
					1	2
Land	Local	Rupees	-	100	200	
Site development	Local	Rupees	5	10	150	50
Civil works, buildings	Local	Rupees	20	50	100	300
Machinery	Foreign	US\$	10	10	120	40
Pre-prod. expenditure	Foreign	US\$	3	0	2.5	7.5
Pre-prod. expenditure	Local	Rupees	3	0	25	75
Initial working capital ^b						
Cans	Foreign	US\$	--	--		2.5
Tomato	Local	Rupees	--	--		33.3
Salt	Local	Rupees	--	--		0.8

Table 1: Fixed investment costs

PRE-PRODUCTION EXPENDITURES involve a combination of foreign and local sources. The standard structure is to be modified to provide a separate node for foreign and local components.

^a Depreciation type: linear to scrap, all items.

^b First-year material requirements. Data input is explained in section C.8.

1. Select the PRE-PRODUCTION EXPENDITURES node by clicking into the description area of the node. A bold frame is drawn around the node.
2. Choose **Insert** in the EDIT menu. The INSERT NEW ITEMS modal window is displayed.
3. Select the **User-defined** radio button.
4. Select the NUMBER OF ITEMS entry field, enter **2**, then press [**ENTER**].
5. Choose the **Insert** pushbutton. The generically named items appear in the list box.
6. Use the iconic buttons and data field to edit the names of the two listed subnodes to **PP Exp - F** and **PP Exp - L**.
7. Accept the data with the **OK** pushbutton.

The two newly created nodes appear in the browser as subnodes of the PRE-PRODUCTION EXPENDITURE node.

Insert New Items

Insert below: Pre-production expenditures

☐ According to level of feasibility study

☒ User-defined Number of items:

Insert Delete

X + [check] PP Exp - L

	Description	Share (%)
21	PP Exp - F	---
22	Pre-production expenditures-2	---

OK Cancel

Figure 9: Insert new items modal window

The QUANTITY = 1 input mode is advantageous in this case for the entry of investment data as only the total values are provided. For fixed investment data, the value is entered as the PRICE.

1. Choose **Defaults** in the EDIT menu.
2. Select **Quantity = 1** in the INPUT MODE drop-down list box.
3. Accept the default selections with **OK** in the DEFAULTS modal window.

The procedure below is described for PLANT MACHINERY AND EQUIPMENT only. A similar procedure should be applied to all other fixed investment items except INITIAL

WORKING CAPITAL, which is defined in the ANNUAL ADJUSTMENTS panel of the PRODUCTION COST windows (see chapter II.7.). The data for all other items (market, currency, depreciation conditions, cost in each year of construction) are shown in table 1.

- 1. Choose the Table Icon for the PLANT MACHINERY AND EQUIPMENT node. The PLANT MACHINERY AND EQUIPMENT window is displayed.

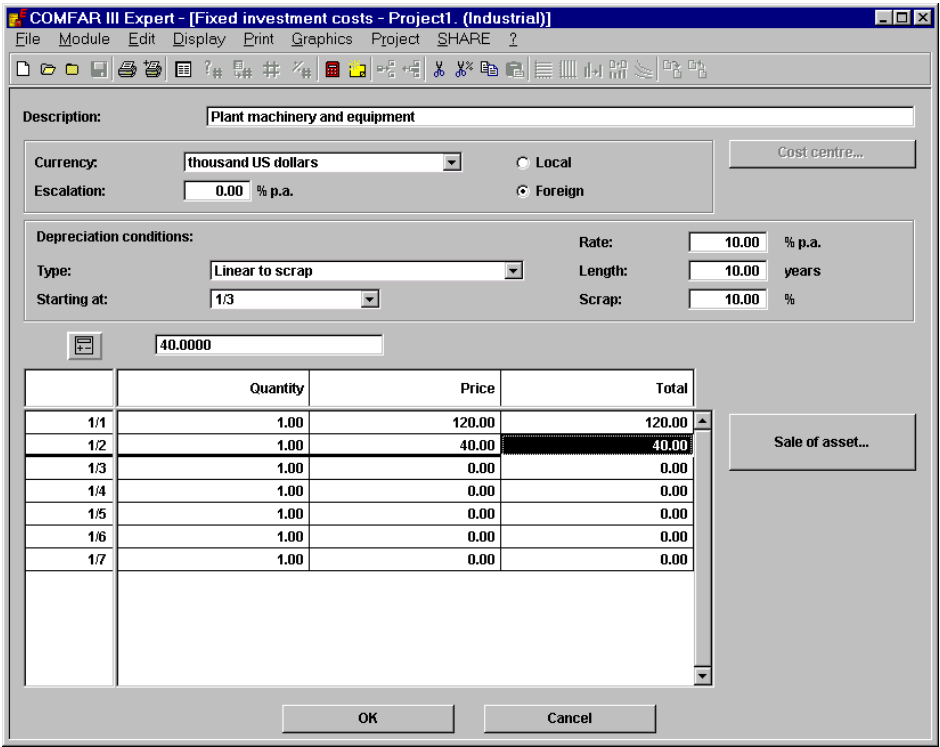


Figure 10: Plant machinery window

- 2. Select **thousand US dollars** in the CURRENCY drop-down list box.
- 3. Select the **Foreign** radio button to designate the origin of the item.
- 4. Select **Linear to scrap** from the TYPE drop-down list box in the DEPRECIATION CONDITIONS panel (unless displayed as the default value).
- 5. Use the STARTING AT drop-down list box to select the starting date of depreciation as the start of production (1/3), which should be displayed as the default value.
- 6. Select the RATE entry field and enter the value **10**. The LENGTH entry field automatically displays the corresponding length of the depreciation period, **10** years, when the rate is accepted by pressing either [ENTER] or [TAB]. Alternatively, enter the number of years and the corresponding rate is automatically displayed.

7. Select the **SCRAP** entry field and enter **10** (scrap value as % of the original asset value).
8. Use the iconic buttons and list box to enter the data in table 2 for **FOREIGN PLANT MACHINERY** (all values are expressed in thousand US \$).

PERIOD	QUANTITY	PRICE
1/1	1	120
1/2	1	40

Table 2: Data for foreign plant machinery

9. Accept the data with the **OK** pushbutton.
10. Enter all other cost items shown in table 1 (except for initial working capital).
11. Choose the Compress Icon of the **FIXED INVESTMENT COSTS** node.

7. Production costs

All production costs are entered as **STANDARD PRODUCTION COSTS**. Initial stocks of raw materials and factory supplies (initial working capital) which are purchased in the second construction year are entered as **ANNUAL ADJUSTMENTS** (see below).

Production costs are defined in the windows corresponding to subnodes of the **PRODUCTION COSTS** node.

- Choose the **Extend Icon** for the **PRODUCTION COSTS** node by clicking the **right (!)** mouse button.

The structure of production costs is displayed with a node for each cost category included in the standard structure.

The production costs at maximum sales level of 2,600 tons and the percentage variable is shown in table 3. Foreign values are expressed in thousand US\$ and local values in thousand rupees.

Three types of raw materials are defined, each of which requires a separate node. A subnode is created for each type. The generic titles are revised to reflect the names of the raw material items (**TOMATO**, **SALT** and **CANS**).

1. Select the **RAW MATERIALS** node.
2. Choose **Insert** in the **EDIT** menu. The **INSERT NEW ITEMS** modal window is displayed.
3. Select the **User-defined** radio button.
4. Select the **NUMBER OF ITEMS** entry field and type **3**, then press **[ENTER]**.
5. Use the iconic buttons and list box to edit the names of the three raw material subnodes as described above.

6. Accept the data with the **OK** pushbutton. The newly created nodes appear in the browser as subnodes of the RAW MATERIALS node.

ITEM	ANNUAL COST (thousands)		VARIABLE (%)
	FOREIGN (US\$)	LOCAL (Rs)	
Raw materials			
Tomato		200	100
Salt		20	100
Cans	20		100
Utilities		20	100
Repair & maintenance		30	50
Labour		50	20
Factory overhead		80	0
Admin. overhead		60	0
Marketing		40	50

Table 3: Production costs

COMFAR III Expert - [Production costs - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description:

Product:

Currency: ☒ Local ☐ Foreign

Escalation: % p.a. ☐ Foreign

Cost centre...

Standard production costs

☒ At nominal capacity of: ☐ Per unit of output

Quantity: **Variable part:** %

Price: **Fixed part:** %

Total: **Fixed costs:**

Annual adjustments

	Quantity	Price	Total	Var.	Fix.
1/1	0.00	0.00	0.00		
1/2	33.30	1.00	33.30		
1/3	0.00	0.00	0.00	100.00	0.00
1/4	0.00	0.00	0.00	100.00	0.00
1/5	0.00	0.00	0.00	100.00	0.00
1/6	0.00	0.00	0.00	100.00	0.00
1/7	0.00	0.00	0.00	100.00	0.00

OK **Cancel**

Figure 11: Tomato window - standard production costs panel

Below, the procedure is described for defining the RAW MATERIALS - TOMATO costs. Only for the three raw materials is the initial stock defined (initial stock of tomato represents agricultural financing); for these and the other production cost items, the standard costs are defined on the basis of AT NOMINAL CAPACITY in a manner similar to that for TOMATO.

1. Choose the Table Icon for the RAW MATERIALS - TOMATO node.
2. Select **thousand rupees** as the currency using the CURRENCY drop-down list box (default selection).
3. Select the **Local** radio button (default selection).
4. Select the **Standard production costs** panel (default selection).
5. Select the **At nominal capacity** radio button (default selection); the nominal capacity of **2,600** tons appears in the display field.
6. Select the QUANTITY field and enter the value **200**.
7. Select the PRICE field and enter the value **1**.
8. Select the VARIABLE PART field and enter the value **100** (default value).
9. Enter all other production cost items according to table 3 (standard production costs).
10. Use the ANNUAL ADJUSTMENTS list box to enter the initial stock of raw materials shown in table 1, as described below.

8. Initial working capital

The ANNUAL ADJUSTMENTS list box of the PRODUCTION COSTS window of each material (inventory) cost item contains also entry lines for the construction phase (see Figure 12). Entries into these lines are treated as initial investment (initial stock of materials).

1. The initial stock of tomato is entered in the ANNUAL ADJUSTMENTS panel. Select the **Annual adjustments** panel.
2. Select the period **1/2** (second year of construction) in the list box. Use the iconic buttons to enter **Quantity, 33.3**, and **Price, 1**. (see table 1)
3. Accept the data with the **OK** pushbutton.
4. Enter the other items of initial stock of raw materials (salt and cans) shown in table 1.
5. Choose the Compress Icon of the PRODUCTION COSTS node.

COMFAR III Expert - [Production costs - Project1. (Industrial)]

FileModuleEditDisplayPrintGraphicsProjectSHARE?

Description: Tomato

Product: Canned tomato

Currency: thousand rupeesLocalEscalation: 0.00 % p.a.ForeignCost centre...

Standard production costs

At nominal capacity of: 2,600.00Per unit of output

Quantity: 200.0000Variable part: 100.00 %Price: 1.0000Fixed part: 0.00 %Total: 200.0000Fixed costs:

Annual adjustments

33.3000

	Quantity	Price	Total	Var.	Fix.
1/1	0.00	0.00	0.00		
1/2	33.30	1.00	33.30		
1/3	0.00	0.00	0.00	100.00	0.00
1/4	0.00	0.00	0.00	100.00	0.00
1/5	0.00	0.00	0.00	100.00	0.00
1/6	0.00	0.00	0.00	100.00	0.00
1/7	0.00	0.00	0.00	100.00	0.00

OKCancel

Figure 12: Tomato window - annual adjustments panel

9. Sales programme

The sales programme is defined in the windows of the respective subnodes of the SALES PROGRAMME node.

- Choose the Extend Icon of the SALES PROGRAMME node.

The structure of the sales programme is displayed with a node for each product defined before (see chapter II.3).

The proposed sales programme is shown in table 4. All production is exported and is paid in US\$.

PROJECT YEAR (Two years construction)	3	4	5	6	7
Percentage capacity	50	75	100	100	100
Sales level (tons)	1,300	1,950	2,600	2,600	2,600

Table 4: Sales programme

- 1. Choose the Table Icon for the CANNED TOMATO node.
- 2. Select **thousand US\$** using the CURRENCY drop-down list box.
- 3. Select the **Foreign** radio button.
- 4. Use the iconic buttons and list box to enter the **Quantity** and **Price** for each production period (the price is expressed in thousand US\$).

PERIOD	QUANTITY (thousands)	PRICE (thousand US\$)
1/3	1,300	0.1
1/4	1,950	0.1
1/5	2,600	0.1
1/6	2,600	0.1
1/7	2,600	0.1

Table 5: Data for quantity and price

- 5. Accept the data with the **OK** pushbutton.
- 6. Choose the Compress Icon of the SALES PROGRAMME window.

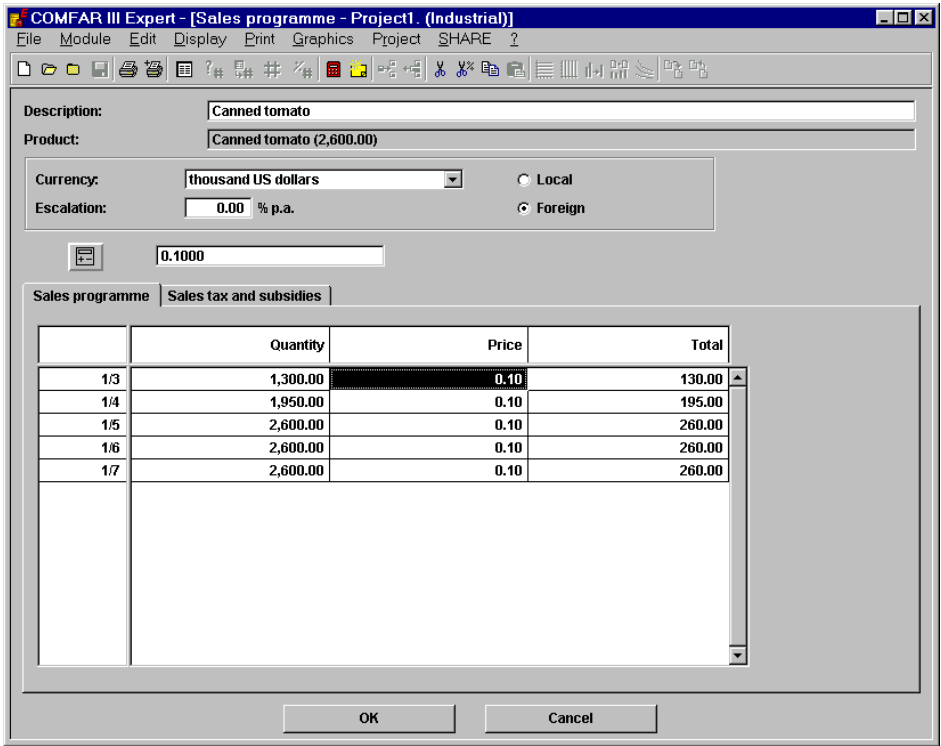


Figure 13: Sales programme window with sales programme panel

10. Working capital

Working capital requirements during the production phase are defined in terms of MINIMUM DAYS COVERAGE (Mdc) as shown in table 6. The COEFFICIENT OF TURNOVER (Coto) is the number of rotations per annum (360/DAYS COVERAGE).

ITEM	DAYS COVERAGE (MDC)
Inventory of material items	
Tomato (production credit to farmers)	120
Salt	30
Cans	90
Utilities	30
Work in progress	2
Finished product	30
Accounts receivable	30
Cash-in-hand (local and foreign)	30
Accounts payable	0

Table 6: Working capital requirements

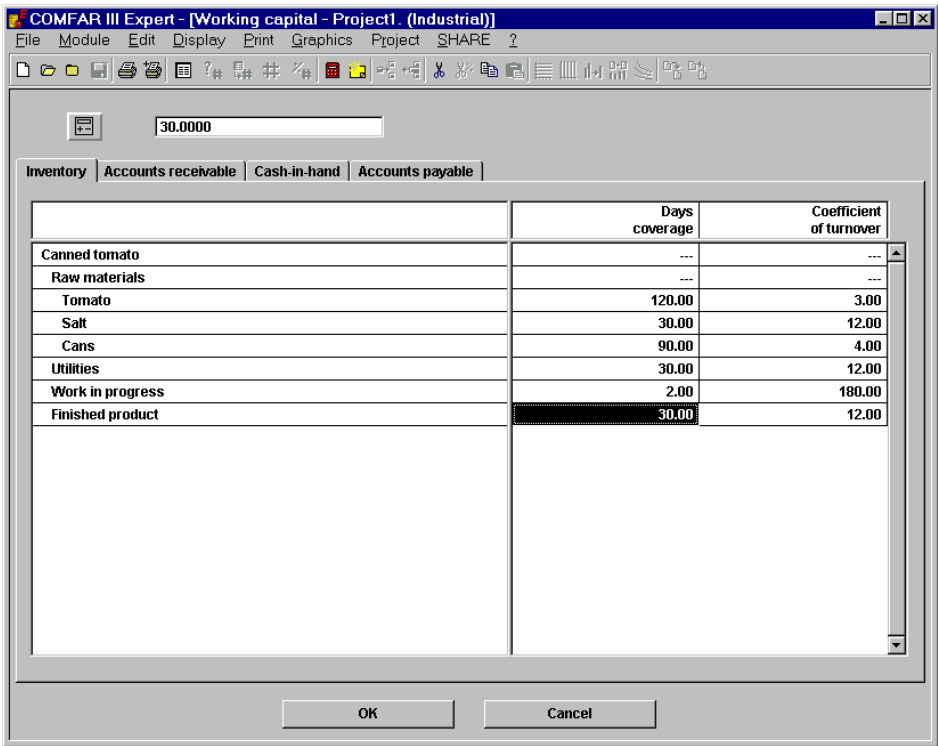


Figure 14: Working capital window

1. Choose the **Table Icon** for the **WORKING CAPITAL** node. The **WORKING CAPITAL** window is displayed.
2. Select the **Inventory** tab. The **INVENTORY** list box is displayed.
3. Use the iconic buttons and list box to enter the above values for inventory items (raw materials, finished products, work in progress). The corresponding annual turnover values (Coto) are displayed automatically.
4. Select the **Accounts receivable** tab.
5. Use the iconic buttons to enter **30** for **DAYS COVERAGE** of **ACCOUNTS RECEIVABLE**.
6. Select the **Cash-in-hand** tab.
7. Use the iconic buttons to enter **30** for both **DAYS COVERAGE** of **CASH-IN-HAND - LOCAL** and **CASH-IN-HAND - FOREIGN**.
8. Select the **Accounts payable** tab.
9. Use the iconic buttons to enter **0** for the **DAYS COVERAGE** of **ACCOUNTS PAYABLE**.
10. Accept the selections with the **OK** pushbutton.

The project should now be saved in the original state without the definition of sources of finance, profit distribution and income tax definitions.

1. Choose **Save Project as** in the **FILE** menu. The **SAVE PROJECT AS** modal window is displayed. The **FILE NAME** entry field is automatically selected.
2. Enter the name of the file, **TOMCAN**, in the **FILE NAME** entry field (please refer to the note given in chapter II. *Tomato canning*).
3. Save the file by choosing the **SAVE** pushbutton. Control returns to the input browser.

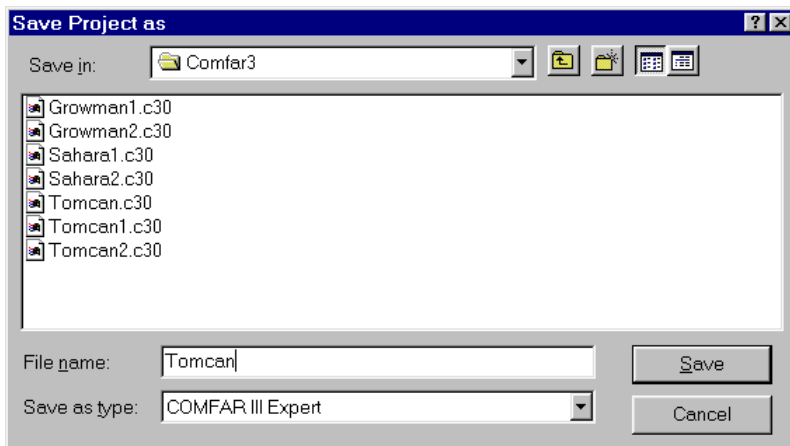


Figure 15: Save project as modal window

D. INITIAL CALCULATIONS

Initial calculations are performed to determine the financial requirements of the project. If no sources of finance are defined, the program increases equity automatically during the construction phase to cover cash deficits. The cash flow for financial planning reveals the magnitude, type (foreign, local) and timing of the requirements from which the financing plan can be developed.

Reports to be calculated can be selected using the **Select results** feature of the MODULE menu. However, a number of results are calculated by default and these are sufficient to provide the required output for this exercise.

1. Choose **Calculations** in the MODULE menu. The CALCULATIONS modal window is displayed showing the list of reports to be produced. A Check Icon appears in the DONE column when the calculation of the listed item is complete.
2. Choose the **Start** pushbutton. When calculations are complete the window CALCULATION REPORT is displayed, indicating that the project is underfinanced. After accepting with the **OK** pushbutton, control automatically returns to the show results browser, from which the results to be displayed or printed can be selected. At this point the result of interest is the CASH FLOW FOR FINANCIAL PLANNING in the BUSINESS RESULTS structure.

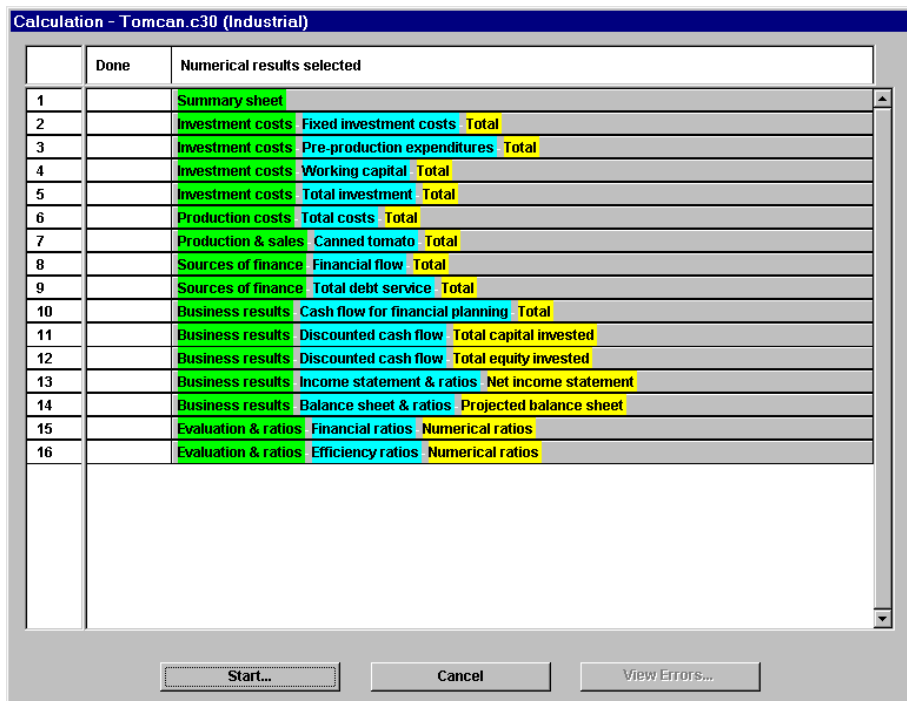


Figure 16: Calculation modal window

- Choose the Extend Icon for the BUSINESS RESULTS node. The BUSINESS RESULTS structure is extended to reveal four nodes, the uppermost of which is the CASH FLOW FOR FINANCIAL PLANNING node, which is further extended by choosing its Extend Icon to reveal the TOTAL node (one of the default results).
- Choose the Table Icon for the TOTAL node. The BUSINESS RESULTS/ CASH FLOW FOR FINANCIAL PLANNING/TOTAL result is displayed.

	Construction 1	Construction 2	Production 3	Production 4
Inflow funds	0.00	0.00	0.00	0.00
Inflow operation	0.00	0.00	650.00	975.00
Other income	0.00	0.00	0.00	0.00
TOTAL CASH OUTFLOW	1,087.50	709.10	497.00	542.09
Increase in fixed assets	1,087.50	662.50	0.00	0.00
Increase in current assets	0.00	46.60	89.50	38.34
Operating costs	0.00	0.00	377.50	468.75
Marketing costs	0.00	0.00	30.00	35.00
Income (corporate) tax	0.00	0.00	0.00	0.00
Financial costs	0.00	0.00	0.00	0.00
Loan repayment	0.00	0.00	0.00	0.00
Dividends	0.00	0.00	0.00	0.00
Equity capital refund	0.00	0.00	0.00	0.00
SURPLUS (DEFICIT)	-1,087.50	-709.10	153.00	432.91
CUMULATIVE CASH BALANCE	-1,087.50	-1,796.60	-1,643.60	-1,210.69
Foreign surplus (deficit)	-612.50	-250.00	590.32	889.98
Local surplus (deficit)	-475.00	-459.10	-437.33	-457.06
Foreign cumulative cash balance	-612.50	-862.50	-272.18	617.80
Local cumulative cash balance	-475.00	-934.10	-1,371.43	-1,828.49
Net flow of funds	0.00	0.00	0.00	0.00

Figure 17: Business results - cash flow for financial planning - total result

- Use the vertical scroll bar to move to the bottom of the table so that the SURPLUS/DEFICIT line and FOREIGN and LOCAL surplus/deficit lines are revealed for the first two years of the project. The data for the first two years is as follows (all expressed in the accounting currency, thousand rupees):

ITEM	YEAR	
	1	2
Surplus/deficit (total)	(1,087.5)	(709.1)
Foreign surplus/deficit	(612.5)	(250.0)
Local surplus/deficit	(475.0)	(459.1)

Table 7: Data for total and for foreign and local surplus/deficit

6. Accept the result with the **OK** pushbutton. Control returns to the Show results browser.

E. FINANCE PLAN, INCOME TAX AND DATA ENTRY

The financial conditions for the project are as follows:

Debt/equity

By agreement of the parties, the proportions of debt and equity are to be 60/40, respectively, of the initial investment in each of the two years of construction.

Loan

The development bank provides 60% of the initial investment with a loan at an interest rate of 12% to be repaid in three equal installments on 31/12 of years 3-5. Each year's requirements are covered by two disbursements on 1/1 and 1/7 of each year. Interest during the construction phase is to be capitalized.

Short-term loan

If necessary, short-term financing is available to cover operating deficits at an interest rate of 20%.

Opportunity cost of capital

The cost of capital is 12% for both the total investment and for equity. For calculation of the MIRR, the reinvestment rate is 12% and the borrowing rate is 8%. The equity shares have a time horizon (for Short NPV calculation of 5 years).

Corporate taxes

Profits are taxed at a flat 20% of net income. A two-year tax holiday has been granted to the project as an incentive.

Full convertibility is assumed so that all loans can be expressed in local currency (thousand Rs). Assigning 60% of the initial investment to the loan and 40% to equity, the preliminary finance plan is as shown in table 8.

SOURCE OF FINANCE	YEAR	
	1	2
Equity	435.0	283.7
Development bank loan	652.5	425.4
Total	1,087.5	709.1

Table 8: Preliminary finance plan

- Choose **Data Input** in the MODULE menu.

The data input browser is displayed. Data can now be entered in the SOURCES OF FINANCE structure for equity and the loan and in the TAXES, ALLOWANCES node for the corporate tax conditions.

1. Equity

1. Extend the SOURCES OF FINANCE and then the EQUITY/RISK CAPITAL node by successively clicking the Extend Icon with the left mouse button at each level.
2. Choose the Table Icon for the EQUITY SHARES node (subnode of EQUITY/RISK CAPITAL). The EQUITY SHARES window is displayed. No entries are necessary in the PREFERRED DIVIDENDS cells as all distributions are considered ordinary dividends.
3. Select **thousand rupees** in the CURRENCIES drop-down list box (default selection).
4. Select the **Local** radio button (default selection).
5. Enter the equity values shown in table 8 for the first two years of the project in the periods 1/1 and 1/2 using the iconic buttons and entry field.
6. Accept the data with the **OK** pushbutton. Control returns to the browser.

COMFAR III Expert - [Equity shares - Tomcan.c30 (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Equity shares

Currency: thousand rupees

Profit repatr.: 0.00 % p.a.

☒ Local ☐ Foreign

283.7000

	Amount paid-in	Amount paid-out	Preferred dividends - abs.	Preferred dividends - %
1/1	435.00	0.00	---	---
1/2	283.70	0.00	---	---
1/3	0.00	0.00	0.00	0.00
1/4	0.00	0.00	0.00	0.00
1/5	0.00	0.00	0.00	0.00
1/6	0.00	0.00	0.00	0.00
1/7	0.00	0.00	0.00	0.00

OK Cancel

Figure 18: Equity shares window

2. Development bank loan

1. Choose the Table Icon for the LONG-TERM LOANS node. The LONG-TERM LOANS window is displayed.
2. Select **thousand rupees** in the CURRENCY drop-down list box (default selection).
3. Select the **Local** radio button (default selection).
4. Select the **Conditions** tab (default selection). The CONDITIONS panel is displayed in the LONG-TERM LOANS window.

The screenshot shows the 'COMFAR III Expert - [Loans - Tomcan.c30 (Industrial)]' window. The 'Description' field is set to 'Long-term loans'. The 'Currency' is 'thousand rupees' and the 'Local' radio button is selected. The 'Total' is 1,077.90. The 'Conditions' tab is active, showing a table of amounts and various loan parameters.

	Amount
1/1	652.50
1/2	425.40
1/3	0.00
1/4	0.00
1/5	0.00

Loan Conditions:

- Type: Constant principal
- Repayment: Yearly
- Month interest paid: 31.12
- Disbursements until: 31/12/5 (dd/mm/yyyy)
- First repayment: 31/12/5 (dd/mm/yyyy)
- Number of repayments: 3
- Period of repayment: 3 years 0 months
- Last repayment: 31/12/7 (dd/mm/yyyy)

Figure 19: Conditions panel - long-term loans window

5. Select **Constant principal** in the TYPE drop-down list box.
6. Select **Yearly** in the REPAYMENT drop-down list box.
7. Select the FIRST REPAYMENT field and enter **31/12/5**.
8. Select the NUMBER OF REPAYMENTS field and enter **3**. Some information is provided in display-only fields. MONTH INTEREST PAID is fixed by the FIRST REPAYMENT date. The PERIOD OF REPAYMENT fields show 3 years and 0 months as the length of the repayment phase. The LAST REPAYMENT is on 31/12/7.

9. Select the **Disbursements** tab. The DISBURSEMENTS panel is displayed in the LONG-TERM LOANS window.

COMFAR III Expert - [Loans - Tomcan.c30 (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Long-term loans

Currency: thousand rupees Local Foreign

Total: 1,077.90

Conditions Disbursements Interest Fees

Edit: dd/mm/yyyy

Date: 1/1/2

Amount: 212.70

New Delete Edit Accept Edit

	Amount
1/1	652.50
1/2	425.40
1/3	0.00
1/4	0.00
1/5	0.00

1/1/1	326.25
1/7/1	326.25
1/1/2	212.70
1/7/2	212.70

OK Cancel

Figure 20: Disbursements panel - long-term loans window

10. Select the **New** pushbutton and enter in the EDIT panel the following disbursements, assuming two equal disbursements in each of the first two years on 1/1 and 1/7. The aggregated amounts for each year appear in the AMOUNTS list box (1/1 - 652.5 and 1/2 - 425.4). The total amount of the outstanding loan is shown in the TOTAL display field (1,077.90).

DATE	AMOUNT
1/1/1	326.25
1/7/1	326.25
1/1/2	212.70
1/7/2	212.70

Table 9: Data for disbursements

11. Select the **Interest** tab. The INTEREST panel is displayed in the LONG-TERM LOANS window.
12. Use the EDIT panel to enter the **Date** (1/1/1) and the **Rate** (12%).

13. Select the **Capitalize interest** check box and accept **12/2** as the until date.
14. For this particular project, no depreciation of interest accrued and no other financial costs have been defined.
15. Accept the data in the LONG-TERM LOANS window with the **OK** pushbutton. Control returns to the input browser.

The screenshot shows the 'COMFAR III Expert - [Loans - Tomcan.c30 (Industrial)]' window. The 'Description:' field is set to 'Long-term loans'. The 'Currency:' is 'thousand rupees'. The 'Local' radio button is selected. The 'Total:' is '1,077.90'. The 'Conditions' tab is active, showing the 'Interest' sub-tab. The 'Edit:' section has a date field set to '1/1/1' and a rate field set to '12.00 % p.a.'. The 'Capitalize interest until:' checkbox is checked, and the 'until' date is '12/2'. The 'Depreciation...' button is visible. The 'Amount' table is as follows:

	Amount
1/1	652.50
1/2	425.40
1/3	0.00
1/4	0.00
1/5	0.00

Figure 21: Interest panel - long-term loans window

3. Profit distribution

1. Choose the Table Icon for the PROFIT DISTRIBUTION node (subnode of the SOURCE OF FINANCE node). The PROFIT DISTRIBUTION window is displayed.
2. Use the iconic buttons to enter **100** for the RETAINED PROFIT (IN %) line of the list box in order to keep all the profit within the project.
3. Accept the data with the **OK** pushbutton.
4. Choose the Compress Icon of the SOURCES OF FINANCE node.

4. Income (corporate) tax

1. Choose the Table Icon for the INCOME (CORPORATE) TAX node (subnode of TAX, ALLOWANCES node). The INCOME (CORPORATE) TAX window is displayed with a column for one tax bracket (> 0.00 , in %) to be applied to all net income.

COMFAR III Expert - [Income (corporate) tax - Tomcan.c30 (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Income (corporate) tax

Currency: thousand rupees ☐ Local ☐ Foreign

Tax brackets... Tax conditions...

20.0000

	Adjustments (absolute)	> 0.00 (in %)
1/3	0.00	20.00
1/4	0.00	20.00
1/5	0.00	20.00
1/6	0.00	20.00
1/7	0.00	20.00

OK Cancel

Figure 22: Income (corporate) tax window

2. Enter **20%** as the tax applicable for all years of the production phase with the iconic buttons and entry field.
3. Choose the **Tax conditions** pushbutton. The TAX CONDITIONS modal window is displayed.

Tax conditions

Tax holidays: 2 years, until: 12/4

Losses carried forward: 0 years

OK Cancel

Figure 23: Tax conditions modal window

4. Select the TAX HOLIDAYS entry field and enter **2** years. Alternatively, select **12/4** in the UNTIL drop-down list box.
5. Accept the data in the INCOME (CORPORATE) TAX window with the **OK** pushbutton.

Control returns to the browser. Prior to saving the project file the PROJECT DESCRIPTION in the PROJECT IDENTIFICATION node is changed to indicate that this version includes the initial finance plan.

1. Choose the Table Icon for the PROJECT IDENTIFICATION node.
2. Change the text in the PROJECT DESCRIPTION multiple-line entry field to indicate that this version includes the finance plan for the project.
3. Accept the new project identification with the **OK** pushbutton in the PROJECT IDENTIFICATION window.

The project is now saved as described before. The FILE NAME for this version should be **TOMCAN1** (please refer to the note given in chapter II. *Tomato canning*).

F. DIVIDEND DISTRIBUTION PLAN

Calculations are now performed on the file TOMCAN1 to determine the effects of defining the finance plan.

These calculations are performed as described above for the TOMCAN file. When calculations are complete, the show results browser is automatically displayed. The results are reviewed to determine:

- If any financing problems remain, such as a cumulative deficit of funds.
- An appropriate income distribution plan (dividends distribution) within the limits of available profits and funds.

The first question is resolved by reviewing the cash flow for financial planning.

1. Extend the BUSINESS RESULTS node and the CASH FLOW FOR FINANCIAL PLANNING node successively by choosing the respective Extend Icon.
2. Choose the Table Icon for the **Total** subnode of the CASH FLOW FOR FINANCIAL PLANNING node.

The CASH FLOW FOR FINANCIAL PLANNING result is displayed. Use the vertical scroll bar and horizontal scroll bar to review the lines SURPLUS/DEFICIT and CUMULATIVE CASH BALANCE. As there are no cumulative deficits, the finance plan is considered acceptable.

The second issue can be resolved by jointly reviewing the SURPLUS/DEFICIT and CUMULATIVE CASH DEFICIT for each period in the CASH FLOW FOR FINANCIAL PLANNING - TOTAL and the NET PROFIT in the INCOME STATEMENT AND RATIOS.

It is possible to switch to another schedule (result) from the active RESULTS window without returning to the show results browser using the drop-down list boxes at the top of a RESULTS window. In this case the INCOME STATEMENT & RATIOS result is to be displayed.

1. Select **Income Statement & Ratios** in the second drop-down list box. The NET INCOME STATEMENT is displayed.
2. Use the vertical and horizontal scroll bars to review the NET PROFIT for each year of the production phase.

The data for determining an appropriate dividend distribution policy are shown in table 10 (from the NET INCOME STATEMENT and the CASH FLOW FOR FINANCIAL PLANNING - TOTAL schedules). The cumulative net profit and all the data concerning the dividends are not calculated by the program.

YEAR	3	4	5	6	7
Net profit	(76.73)	152.02	304.62	384.94	425.27
Cumulative net profit	(76.73)	75.29	379.91	764.85	1,190.12
Cash surplus/deficit	1.77	281.68	12.13	84.92	123.19
Cumulative cash surplus/deficit	1.77	283.45	295.57	380.50	503.68
Retained profit (% of net profit)	100.00	70.00	70.00	70.00	70.00
Profit distributed (% of net profit)	0.00	30.00	30.00	30.00	30.00
Dividend distribution plan	0.00	45.61	91.38	115.48	127.58
Cumulative dividends	0.00	45.61	136.99	252.47	380.05

Table 10: Data for determining an appropriate dividend distribution policy

Assuming that 30% of the net profit is available for distribution as dividends with the further restriction that dividends cannot exceed the cumulative cash available, a distribution plan is developed as shown in table 10. The dividend distribution data are entered in the PROFIT DISTRIBUTION window.

1. Choose **Data Input** in the MODULE menu. The input browser is displayed.
2. Extend the SOURCES OF FINANCE node by clicking the Extend Icon with the left mouse button.
3. Choose the Table Icon for the PROFIT DISTRIBUTION node. The PROFIT DISTRIBUTION window is displayed.
4. In the PROFIT DISTRIBUTED (IN %) line of the list box enter the percentage of dividends as shown in table 10 (the RETAINED PROFIT line automatically is adjusted to 100 less PROFIT DISTRIBUTED, %). The equity shares are to receive 100% of the distribution, as shown in the last line of the list box of the PROFIT DISTRIBUTION window.
5. Accept the data with the **OK** pushbutton.

Control returns to the browser. Prior to calculations, the descriptive text for the file should be changed to indicate that this version includes the profit distribution. The PROJECT DESCRIPTION in the PROJECT IDENTIFICATION window is modified accordingly in a manner similar to that for the TOMCAN1 file as described above.

The file is saved using **Save Project as** in the FILE menu, as in the case of the previous version, under the name TOMCAN2 (please refer to the note given in chapter II. *Tomato canning*).

Prior to calculation it is normally necessary to select required results which are not default selections. In this case all necessary results are default selections. However, CASH FLOW FOR FINANCIAL PLANNING - FOREIGN is selected as an exercise.

1. Choose **Select Results** in the MODULE menu. The select results browser is displayed. The icon at the left of each node is used for selection. A check appears in the icon when the node is selected. All subnodes of a selected node are automatically selected.
2. Extend the BUSINESS RESULTS node one level by clicking the Extend Icon.
3. Extend the CASH FLOW FOR FINANCIAL PLANNING node one level by clicking the Extend Icon with the left mouse button.
4. Select the FOREIGN subnode of CASH FLOW FOR FINANCIAL PLANNING by clicking the icon at the left with the mouse (a check appears in the icon when it is selected).

Perform the calculation by choosing **Calculation** in the MODULE menu as in the previous version of the file. When calculations are complete, control returns automatically to the show results browser.

Any result can now be reviewed by choosing the (numerical) Results Icon or the Graphics Icon for its node. The general procedure is as follows:

1. Extend the section of the show results browser containing the node of interest by successively clicking the Extend Icon with the left mouse button until reaching the desired level of the structure.
2. Choose the Results Icon or the Graphics Icon for the node.

The schedule or graph is displayed. Alternatively, any available schedule or graph can be selected from the series of drop-down list boxes at the top of each RESULTS window, which are numbered in order of position in the structural hierarchy.

The project files **TOMCAN**, **TOMCAN1** and **TOMCAN2** are included in the COMFAR III Expert CD and may be loaded and reviewed.

III. GROWMANIA GARMENTS, LTD.

This case is described in annex I of the *Industrial Feasibility Studies Manual*, pp. 344-348. The reader is referred to this description for details of the case. References are also provided for schedules (tables) in the *Industrial Feasibility Studies Manual* describing the case. Some data have been modified to involve a more comprehensive set of COMFAR features than required by the original description.

Assumptions and conditions underlying the analysis are as follows:

- New industrial project
- Opportunity level study
- Constant pricing
- Cost allocation
- Joint-venture project
- Value-added analysis

Standard default settings are assumed for all data input with the exception of the INPUT mode for data entry, which is adjusted as required. Additional assumptions are included in the text.

A. START COMFAR

The procedure for starting COMFAR is described in chapter III of the *Reference Manual*. When COMFAR is started, the browser and browser overview panels are displayed together with the menu bar at the top of the window.

B. SELECT PROJECT TYPE AND LEVEL OF ANALYSIS

1. Choose **New Project** in the FILE menu. The NEW PROJECT modal window is displayed.

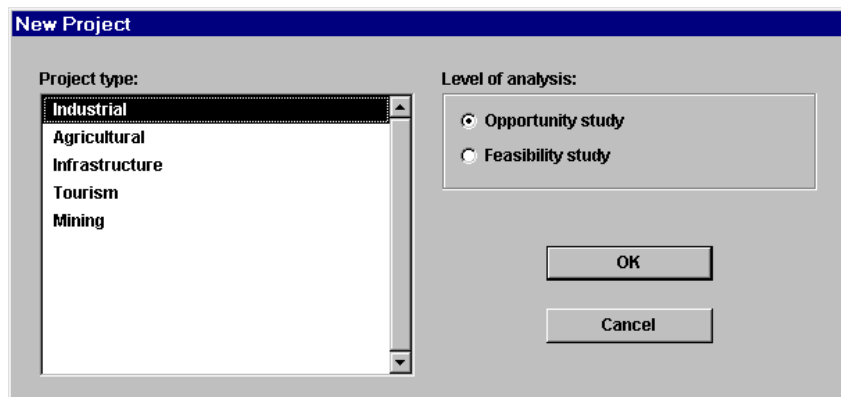


Figure 24: New project modal window

2. Select **Industrial** in the PROJECT TYPE list box.
3. Select the **Opportunity study** radio button
4. Choose the **OK** pushbutton.

The browser and browser overview panel are displayed with the menu bar. The PROJECT node labelled PROJECT INPUT DATA is displayed with the Compress Icon at the right, indicating that the node is extended. The initial data entry sequence starts with the PROJECT IDENTIFICATION node which is also displayed. This sequence involves from five to eight nodes, each of which is displayed only after data in the previous node are accepted (with **OK**). The specific number of nodes in the sequence is determined by the project features selected in the PROJECT IDENTIFICATION window.

C. FINANCIAL DATA ENTRY

1. Project identification

1. Move the mouse cursor inside the browser overview frame. The cursor changes to the move cursor. Drag the frame so that the PROJECT INPUT DATA node and PROJECT IDENTIFICATION node are displayed in the browser.

The screenshot shows the 'COMFAR III Expert - [Project identification - Project1. (Industrial)]' window. It has a menu bar with 'File', 'Module', 'Edit', 'Display', 'Print', 'Graphics', 'Project', 'SHARE', and '?'. Below the menu bar is a toolbar with various icons. The main area contains the following fields and controls:

- Project title:** A text box containing 'GROWMANIA GARMENTS, Ltd.'
- Project description:** A text area containing 'COMFAR III Expert tutorial case, part one, financial analysis'.
- Date and time:** A text box containing '29 June 1995'.
- Project classification:** A group box containing three radio buttons: 'New project' (unselected), 'Expansion/rehabilitation project' (unselected), and 'Joint-venture project' (selected).
- Depth of analysis:** A group box containing two checkboxes: 'Financial analysis' (checked) and 'Economic analysis' (unchecked). Below these is a 'Special features...' button.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

Figure 25: Project identification window

2. Choose the Table Icon for the PROJECT IDENTIFICATION node. The PROJECT IDENTIFICATION window is displayed.
3. Select the PROJECT TITLE entry field and enter the name of the project.
4. Select the PROJECT DESCRIPTION multiple-line entry field and enter descriptive text for the project.
5. Select the DATE AND TIME entry field, enter the date and time as text.
6. The **New project** radio button is selected by default.
7. Select the **Joint-venture project** check box.
8. Choose the **Special features** pushbutton. The SPECIAL FEATURES modal window is displayed.

Special features

☐ Cost centre analysis

☒ Cost allocation

☐ Inflation

☐ Revaluation of fixed assets

Escalate first year: time(s)

Stock model:

Note:

According to the UNIDO Manual for the Preparation of Industrial Feasibility Studies (newly revised and expanded edition) it is recommended to apply cost allocation in combination with cost centre analysis.

OK Cancel

Figure 26: Special features modal window

9. Select the **Cost allocation** check box. The **Cost centre analysis** check box is automatically selected.
10. Clear the **Cost centre analysis** check box by clicking with the left mouse button.
11. Select **by Total** in the STOCK MODEL drop-down list box (value rather than quantity algorithm used in working capital calculations); this should be selected by default.
12. Accept the selections in the SPECIAL FEATURES modal window by clicking the **OK** pushbutton. Control returns to the PROJECT IDENTIFICATION window.
13. Choose **OK** in the PROJECT IDENTIFICATION window. Control returns to the browser. The PLANNING HORIZON node is displayed.

2. Planning horizon

The planning horizon comprises two years of construction and fifteen years of production. Planning during construction is yearly. During a one-year start-up phase, planning is on a quarterly basis.

1. Choose the Table Icon for the PLANNING HORIZON node. The PLANNING HORIZON window is displayed. The insertion point is located by default in the BEGIN field of the CONSTRUCTION PHASE panel.

COMFAR III Expert - [Planning horizon - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Month of balance: 12

Construction phase:

Begin: 1/1991 (mm/yyyy)

Length: 2 years

0 months

End: 12/1992 (mm/yyyy)

Production phase:

Begin: 1/1993 (mm/yyyy)

Length: 15 periods

Startup phase: 12 months

End: 12/2007 (mm/yyyy)

Reference year: 12/1995

Structure of planning horizon:

☒ Yearly ☐ Monthly ☐ Half-yearly ☐ User-defined: ☒ Quarterly

Number of periods: 4

Insert Delete Default

92												93																	
7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12

OK Cancel

Figure 27: Planning horizon window

Fields are most easily traversed using [TAB] but can also be selected with the mouse. Data entries in fields are most readily registered (accepted) using [ENTER] or by selecting another field.

2. Select **12** for the **Month of balance** in the drop-down list box (12 is the default value).
3. Enter the beginning date **1/1991** in the BEGIN field of the CONSTRUCTION PHASE panel.
4. Enter **2** in the LENGTH field.
5. Leave the value **0** in the MONTHS field.

The END field in the CONSTRUCTION PHASE panel automatically displays the end date of **12/1992** (the last day of December 1992). The BEGIN

field in the PRODUCTION PHASE panel automatically displays the beginning date of the production phase **1/1993** (first day).

The number of periods (years) in the production phase is to be 15. The first year of production is to be divided into four quarters as the startup phase for planning purposes.

6. Enter **15** in the LENGTH-PERIOD field of the PRODUCTION PHASE panel. The project END date is automatically displayed (**12/2007**).
7. Enter **12** in the STARTUP PHASE field.
8. Select the first month of 1993 in the STRUCTURE OF PLANNING HORIZON list box.
9. Select the **quarterly** radio button.
10. Enter **4** in the NUMBER OF PERIODS field.
11. Choose the **Insert** pushbutton.

The planning horizon is adjusted to include four quarterly periods for the production phase. All data entry windows involving the production phase will include the four quarterly periods for the startup phase.

A REFERENCE DATE can be selected as the last day of any production phase period. The REFERENCE DATE is significant for calculating representative results, such as break-even. It should, therefore, be a year of full operations. In this case the date 12/1995 is selected.

12. Choose **12/1995** in the REFERENCE YEAR drop-down list box.
13. Choose **OK** in the PLANNING HORIZON window. Control returns to the browser. The PRODUCTS node is displayed.

3. Products

Three products are planned: shirts, blouses and dresses. Planned production levels and prices at maximum capacity are as shown in table 11:

PRODUCT	NOMINAL CAPACITY (thousand units)	DOMESTIC PRICE (NCU)	EXPORT PRICE (DN) ^a
Shirts	724	5	10
Blouses	820	4	8
Dresses	560	10	20

Table 11: Planned production levels and prices at nominal capacity

^a The official rate of exchange is 2.00 Dn per NCU. The project receives the same dinar price for exports as for domestically marketed items as a consequence of export subsidies of 10% for each product.

1. Choose the Table Icon for the PRODUCTS node. The PRODUCTS window is displayed.

COMFAR III Expert - [Products - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Edit:

Number: 3

Name: Dresses

Actual start of production: 1/1993

Actual end of production: 12/2007

Nominal capacity: 560.00

New

Delete

Edit

Accept Edit

	Name	Start	End	Nominal capacity
1	Shirts	1/1993	12/2007	724.00
2	Blouses	1/1993	12/2007	820.00
3	Dresses	1/1993	12/2007	560.00

OK Cancel

Figure 28: Products window

2. Choose the **Edit** pushbutton to sequentially enter in the EDIT panel the **Name**, **Actual start of production (1/1993)**, **Actual end of production (12/2007)** and **Nominal capacity** as specified above in number of units.

Note that capacities are defined in thousands of units. The entry for shirts, for example, is 724. Product prices are then entered in absolute terms so that they are identifiable within the restriction of two decimal places in the entry windows. Value is calculated as quantity multiplied by price, which is in terms of thousands of monetary units as required.

3. Choose the **Accept Edit** pushbutton to transfer the entries to the PRODUCT list box.
4. Choose the **New** pushbutton to sequentially enter in the EDIT panel the data for the other products (blouses and dresses) and continue as described above.
5. Choose **OK** in the PRODUCTS window. Control returns to the browser. The CURRENCIES node is displayed.

4. Currencies

The local currency is the NCU. The export currency is the dinar (Dn) with an official exchange rate (OER) of 2 Dn per NCU. Machinery and equipment are purchased in United States dollars (US\$) with an OER of 0.80 US\$ per NCU. All reports are expressed in the accounting currency, thousand NCU.

- 1. Choose the Table Icon for the CURRENCIES node. The CURRENCIES window is displayed. For a new project COMFAR offers the local currency as defined in the DEFAULTS modal window (*Reference Manual*, chapter V.C).

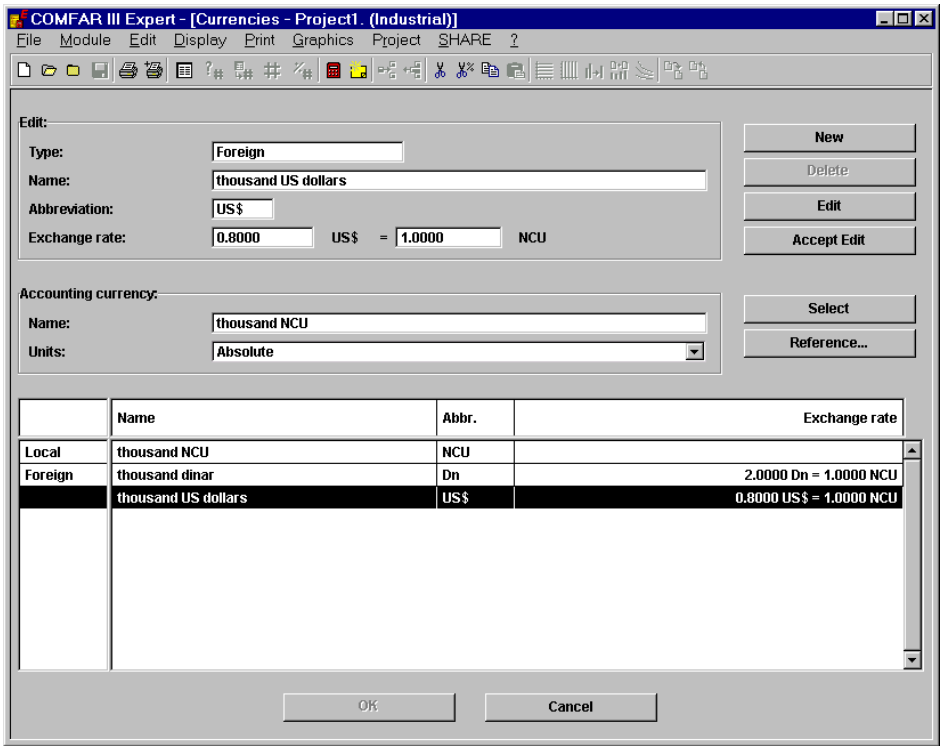


Figure 29: Currencies window

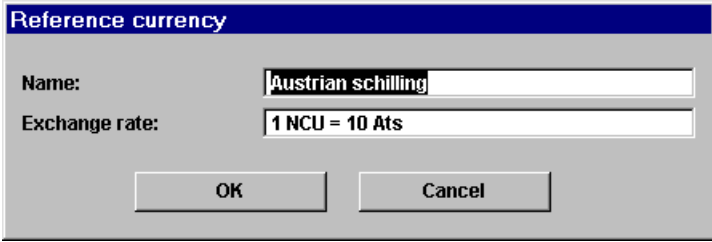
- 2. Choose the **Edit** pushbutton to enter in the EDIT panel the **Name** (thousand NCU) and **Abbreviation** (NCU) of the local currency. In this case the EXCHANGE RATE field is inactive. TYPE is a display field only (local or foreign).
- 3. Choose the **Accept Edit** pushbutton to transfer the entries to the CURRENCIES list box.
- 4. Choose the **New** feature of the EDIT panel to enter the **Name** (thousand dinar), **Abbreviation** (Dn) and **Exchange rate** (2 Dn = 1.0 NCU) for the

foreign currency (export market). Similarly, enter the data for the dollar (thousand US dollar, US\$, 0.8 US\$ = 1.0 NCU).

5. Choose the **Accept Edit** pushbutton.
6. Select the accounting currency. (The local currency, thousand NCU, is already selected by default; if not, the following steps would be carried out: first select **NCU** in the CURRENCIES list box and then choose the **Select** pushbutton. The selected currency is displayed in the ACCOUNTING CURRENCY field.)
7. Use the UNITS drop-down list box to select **Absolute** as the accounting unit (the accounting currency, NCU, is already expressed in thousands of currency units).

The reference currency and exchange rate are defined as text only. The purpose is to provide an easy reference for conversion of units expressed in the accounting or other currency. This information appears only in the SUMMARY schedule. In this case the Austrian schilling is the reference currency.

8. Choose the **Reference** pushbutton. The REFERENCE CURRENCY modal window is displayed.

A screenshot of a modal window titled "Reference currency". It has a blue title bar. Inside, there are two text input fields. The first is labeled "Name:" and contains the text "Austrian schilling". The second is labeled "Exchange rate:" and contains the text "1 NCU = 10 Ats". At the bottom of the window, there are two buttons: "OK" and "Cancel".

Reference currency	
Name:	Austrian schilling
Exchange rate:	1 NCU = 10 Ats
<div>OK Cancel</div>	

Figure 30: Reference currency modal window

9. Select the NAME entry field and enter **Austrian schilling**.
10. Select the EXCHANGE RATE field, enter **1 NCU = 10 Ats**.
11. Choose the **OK** pushbutton in the REFERENCE CURRENCY modal window. Control returns to the CURRENCY window.
12. Accept the selections with the **OK** pushbutton in the CURRENCY window. Control returns to the browser. The JOINT-VENTURE PARTNER node is displayed.

5. Joint-venture partner

The production and marketing know-how of the joint-venture partner, Garment Importers Ltd. is intended to assist in the development of domestic and import markets.

1. Choose the Table Icon for the JOINT-VENTURE PARTNER node. The JOINT-VENTURE PARTNER window is displayed.

Two lines are shown in the PARTNERS list box as the minimum for a joint-venture project.

COMFAR III Expert - [Joint-venture partner - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Number: 2

Type: ☐ Local ☒ Foreign

Name: Garment Importers, Ltd.

New Delete Edit Accept Edit

	Type	Name
1	Local	Growmania Garments, Ltd.
2	Foreign	Garment Importers, Ltd.

OK Cancel

Figure 31: Joint-venture partners window

2. The line for the first partner is selected by default in the PARTNERS list box. If not, select the first line with the mouse cursor and by clicking the left mouse button.
3. Choose the **Edit** pushbutton. The default information for the first partner is displayed in the EDIT panel.
4. Select the **Local** radio button.
5. Select the NAME field and enter **Growmania Garments Ltd.**
6. Choose the **Accept Edit** pushbutton. The local designation and name of the local partner are transferred to the PARTNERS list box.
7. Select the second line in the PARTNERS list box.

8. Choose the **Edit** pushbutton. The default information for the second partner is displayed in the EDIT panel.
9. Select the **Foreign** radio button.
10. Select the NAME field and enter **Garment Importers Ltd.**
11. Choose the **Accept Edit** pushbutton. The foreign designation and name of the foreign partner are transferred to the list box.
12. Accept the selections with the **OK** pushbutton. Control is returned to the browser and the DISCOUNTING node is displayed.

6. Discounting

The opportunity cost of capital at each level of investment and for each partner and the number of years for the calculation of the short NPV are shown in table 12.

INVESTMENT	DISCOUNT RATE	YEARS
Total investment	12	17
Total equity	15	6
Growmania Garments Ltd.	10	7
Garment Importers Ltd.	18	5

Table 12: Discount rates

1. Choose the Table Icon for the DISCOUNTING node. The DISCOUNTING window is displayed.
2. Select the **Discounting** tab (it should already be selected by default). The DISCOUNTING list box appears in the window.
3. Enter the values for **Rate (%)** and **Length (years)** for TOTAL INVESTMENT, TOTAL EQUITY CAPITAL and for the two partners, as listed in table 12 (see also *Reference Manual*, chapter IV.3).
4. Select the **Modified Internal Rate of Return** tab. The MODIFIED INTERNAL RATE OF RETURN list box appears in the window. The reinvestment rate (12%) and borrowing rate (8%) are assumed for all levels of investment.
5. Enter **12%** as the **Reinvestment rate** and **8%** as the **Borrowing rate** for TOTAL INVESTMENT, TOTAL EQUITY CAPITAL and for the two partners.
6. Select the **Beginning of first period** radio button. All values are to be discounted to the beginning of the project.
7. Accept the selections with the **OK** pushbutton. The nodes for the remaining standard structure are displayed in the browser.

COMFAR III Expert - [Discounting - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Net present values discounted to:

☐ End of first year (=12/1991) ☒ Beginning of first period (=1/1991)

IRR 12.0000

Discounting Modified Internal Rate of Return

	Rate (%)	Length (years)
Total investment	12.00	17
Total equity capital	15.00	6
Growmania Garments, Ltd.	10.00	7
Garment Importers, Ltd.	18.00	5

OK Cancel

Figure 32: Discounting window

7. Fixed investment costs

Fixed investment costs are described in schedules X-1/1 and X-1/2 of the *Industrial Feasibility Studies Manual*. Pre-production expenditures are described in schedules X-2/1 and X-2/2.

Fixed investment cost items are defined in the windows corresponding to the subnodes of the FIXED INVESTMENT COSTS node.

- Choose the Extend Icon of the FIXED INVESTMENT COSTS node.

The structure of fixed investment costs is displayed with a node for each cost category contained in the standard structure. To center these nodes on the screen, alter the browser position (see chapter II.C.1).

The investment items are listed in table 13. All foreign values (F) are expressed in thousand US dollars and all local values (L) in thousand NCU. Straight-line depreciation at 10% per annum is assumed for all fixed investment items with the exception of locally constructed civil works at 5% and land at 0% (scrap value 100%). A scrap value of 10% of the initial cost of plant machinery and equipment is to be recovered at the end of the project planning period (year $n + 1$). The scrap value of all other items is 0%.

Some fixed investment items are obtained from a combination of foreign and local sources. For the following items the data structure is modified to provide a separate node for foreign and local procurements:

- Site preparation and development
- Civil works, structures and buildings
- Plant machinery and equipment
- Auxiliary and service plant equipment
- Incorporated fixed assets
- Pre-production expenditures

INVESTMENT CATEGORY	CONSTRUCTION PHASE				PRODUCTION PHASE	
	1991		1992		1998	
	F	L	F	L	F	L
Land purchase		20				
Site preparation and development		50	8			
Civil works, buildings		1,000	80	1,800		
Plant machinery & equipment	800	500	1,200	500	160	300
Auxiliary & service equipment				500	160	300
Incorporated fixed assets		430	144	120		
Pre-production expenditure	32.8	250	5.6	10		

Table 13: Investment items

The QUANTITY = 1 input mode is advantageous in this case for the entry of investment data.

1. Choose **Defaults** in the EDIT menu.
2. Select **Quantity = 1** in the INPUT MODE drop-down list box.
3. Accept the default selections with **OK** in the DEFAULTS modal window.

The procedure below is described for plant machinery and equipment; a similar procedure should be applied to all but one (land purchase) of the above items of fixed investment.

1. Select the PLANT MACHINERY AND EQUIPMENT node by clicking into the description area of the node. A bold frame is drawn around this node.
2. Choose **Insert** in the EDIT menu. The INSERT NEW ITEMS modal window is displayed.
3. Select the **User-defined** radio button.
4. Select the NUMBER OF ITEMS entry field and enter **2**; then press **[ENTER]**.
5. Choose the **Insert** pushbutton. The generic names of the items appear in the list box.

6. Use the iconic buttons and data field to edit the names of the listed subnodes, **Plant machinery - foreign** and **Plant machinery - local**.
7. Accept the definitions with the **OK** pushbutton.
8. Apply the above procedure to all items listed in table 13, with the exception of the item land purchase, for which no subnodes are required.

Insert New Items

Insert below:

☐ According to level of feasibility study
☒ **User-defined**

Number of items:

☒

	Description	Share (%)
21	Plant machinery - foreign	---
22	Plant machinery and equipment-2	---

Figure 33: Insert new items modal window

Control is returned to the browser. The PLANT MACHINERY AND EQUIPMENT node is displayed with the Compress Icon rather than the Table Icon. The two subnodes defined above are also displayed. The PLANT MACHINERY AND EQUIPMENT node can now be compressed or extended by choosing the Compress Icon or the Extend Icon, respectively.

Procedures for the entry of PLANT MACHINERY - FOREIGN and CIVIL WORKS - LOCAL are described. These procedures are similar for all other items of fixed investment.

All fixed investment cost items are to be allocated to products using the default allocation key DIRECT COSTS.

Data are taken from schedules X-1/1 (Total fixed investment costs) and X-1/2 (Total fixed investment costs: foreign) of the *Industrial Feasibility Studies Manual*. Data for the pre-production expenditure are taken from schedules X-2/1 and X-2/2 of that *Manual*. The fixed part of working capital is entered as initial stocks in the ANNUAL ADJUSTMENTS panel of the PRODUCTION COSTS window (see chapter III.8).

FOREIGN PLANT MACHINERY

- 1. Choose the Table Icon for the PLANT MACHINERY - FOREIGN node. The PLANT MACHINERY - FOREIGN window is displayed.

COMFAR III Expert - [Fixed investment costs - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Plant machinery - foreign

Currency: thousand US dollars Local Foreign

Escalation: 0.00 % p.a.

Cost allocation...

Depreciation conditions:

Type: Linear to scrap Rate: 10.00 % p.a. Length: 10.00 years

Starting at: 1/1993 Scrap: 10.00 %

1.0000

	Quantity	Price	Total
1/1991	1.00	800.00	800.00
1/1992	1.00	1,200.00	1,200.00
1/1993	1.00	0.00	0.00
4/1993	1.00	0.00	0.00
7/1993	1.00	0.00	0.00
10/1993	1.00	0.00	0.00
1/1994	1.00	0.00	0.00
1/1995	1.00	0.00	0.00
1/1996	1.00	0.00	0.00
1/1997	1.00	0.00	0.00
1/1998	1.00	160.00	160.00
1/1999	1.00	0.00	0.00

Sale of asset...

OK Cancel

Figure 34: Foreign plant machinery window

- 2. Select **thousand US dollars** in the CURRENCY drop-down list box.
- 3. Select the **Foreign** radio button to designate the origin of the item.
- 4. Select **Linear to scrap** (it should be displayed as the default value) in the TYPE drop-down list box of the DEPRECIATION CONDITIONS panel.
- 5. Select the starting date of depreciation as the start of production in the STARTING AT drop-down list box. **1/1993** should be displayed as the default value.
- 6. Select the RATE entry field and enter **10** for the % per annum. The LENGTH entry field automatically displays the corresponding length of the depreciation period, **10 years**, when the RATE is accepted by pressing either [ENTER] or [TAB]. Alternatively, enter the number of years and the corresponding rate is automatically displayed.
- 7. Select the SCRAP entry field and enter **10** for the scrap value, expressed in % of the initial value of the asset.

8. Use the iconic buttons and list box to enter the data in table 14 for FOREIGN PLANT MACHINERY (all values are expressed in thousand US\$). Note that the values are converted from thousand NCU, as shown in the schedules X-1/1 and X-1/2 of the *Industrial Feasibility Studies Manual*, to thousand US\$.

PERIOD	QUANTITY	PRICE
1/1991	1	800
1/1992	1	1,200
1/1998	1	160


Table 14: Data for foreign plant machinery

9. Choose the **Cost allocation** pushbutton. The COST ALLOCATION modal window is displayed.

Cost allocation - Project1. (Industrial)

Description: Plant machinery - foreign

Name:



New

Delete

Edit

Accept Edit

Allocation key selected: Direct costs

Select

	Allocation key	Shirts	Blouses
1	Direct costs	---	---
2	Direct factory costs	---	---
3	Direct material costs	---	---
4	Direct labour costs	---	---
5	Sales	---	---
6	Equal share per product	33.33 %	33.33 %

OK

Cancel

Figure 35: Cost allocation modal window

10. Select the **Direct costs** line in the ALLOCATION KEY list box.
11. Choose the **Select** pushbutton. The DIRECT COSTS key appears in the ALLOCATION KEY SELECTED field.
12. Accept the selection with **OK** in the COST ALLOCATION modal window. Control returns to the PLANT MACHINERY - FOREIGN window.
13. Choose the **OK** pushbutton in the PLANT MACHINERY - FOREIGN window to accept the data.

LOCAL CIVIL WORKS, STRUCTURES AND BUILDINGS

- 1. Choose the Table Icon for the CIVIL WORKS - LOCAL node. The CIVIL WORKS - LOCAL window is displayed.

COMFAR III Expert - [Fixed investment costs - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Civil works - local

Currency: thousand NCU Local Foreign

Escalation: 0.00 % p.a.

Cost allocation...

Depreciation conditions:

Type: Linear to scrap Rate: 5.00 % p.a. Length: 20.00 years

Starting at: 1/1993 Scrap: 0.00 %

1.0000

	Quantity	Price	Total
1/1991	1.00	1,000.00	1,000.00
1/1992	1.00	1,800.00	1,800.00
1/1993	1.00	0.00	0.00
4/1993	1.00	0.00	0.00
7/1993	1.00	0.00	0.00
10/1993	1.00	0.00	0.00
1/1994	1.00	0.00	0.00
1/1995	1.00	0.00	0.00
1/1996	1.00	0.00	0.00
1/1997	1.00	0.00	0.00
1/1998	1.00	0.00	0.00
1/1999	1.00	0.00	0.00

Sale of asset...

OK Cancel

Figure 36: Local civil works window

- 2. Select **thousand NCU** (appears as default currency) in the CURRENCY drop-down list box.
- 3. Select the **Local** radio button to designate the origin of the item (appears as default value).
- 4. Select **Linear to scrap** (displayed as default value) in the TYPE drop-down list box of the DEPRECIATION CONDITIONS panel.
- 5. Select from the STARTING AT drop-down list box the date **1/1993**, the start of production (displayed as default value), as the starting date of depreciation.
- 6. Select the RATE field and enter **5** for the % per annum. The LENGTH entry field automatically displays the corresponding length of the depreciation period, **20** years, when the rate is accepted with [ENTER] or [TAB]. Alternatively, enter the number of years and the corresponding rate is automatically displayed.

7. Select the **SCRAP** entry field and enter **0** for the scrap value, expressed in % of the initial value of the asset.
8. Use the iconic buttons and list box to enter the data in table 15 for **CIVIL WORKS - LOCAL** (all values are expressed in thousand NCU).

PERIOD	QUANTITY	PRICE
1/1991	1	1,000
1/1992	1	1,800

Table 15: Data for civil works - local

9. Choose the **Direct cost** allocation key for this item, as described in **PLANT MACHINERY - FOREIGN** above.
10. Accept the entries by choosing **OK** in the **CIVIL WORKS - LOCAL** window.
11. Apply the above procedure to all cost items listed in table 13.
12. Choose the Compress Icon of the **FIXED INVESTMENT COSTS** node.

PRE-PRODUCTION EXPENDITURES

The total pre-production expenditures (net of interest) for each construction phase period (table 16) are entered as described before (see also table 13). Two subnodes are needed, one for foreign and one for local expenditures.

	FOREIGN		LOCAL	
PERIOD	QUANTITY	PRICE	QUANTITY	PRICE
1/1991	1	32.8	1	250
1/1992	1	5.6	1	10

Table 16: Total pre-production expenditures

8. Production costs

Direct production costs (attributable to a product) include only raw materials A and B, labour and direct marketing costs. All other costs are indirect. All direct production costs are entered as **STANDARD PRODUCTION COSTS**. Indirect production costs and initial stocks of raw materials and factory supplies (initial working capital), which are purchased in the second construction year, are entered as **ANNUAL ADJUSTMENTS**, as described below.

Production costs are defined in the windows corresponding to subnodes of the **PRODUCTION COSTS** node.

- Choose the **Extend Icon** for the **PRODUCTION COSTS** node with the left mouse button.

The structure of production costs is displayed with a node for each defined product and one for indirect costs.

DIRECT PRODUCTION COSTS

The direct cost breakdown for each of the three defined products and initial stocks of raw materials procured in 1992 (the second year of construction) for each product is shown in table 17. Foreign values are expressed in thousand US\$ and local values in thousand NCU.

All of the direct production costs are 100% variable except for DIRECT MARKETING COSTS, which are completely fixed.

The total value for all items is shown in table 17 with the exception of direct labour, which is considered unskilled and is listed in terms of NUMBER OF WORKERS/ANNUAL WAGE to maintain employment creation data for the economic analysis of the project. The number of workers has to be multiplied by the annual wage and the result is entered as quantity.

DIRECT COST ITEM	SHIRTS		BLOUSES		DRESSES		VARIABLE SHARE (%)	
	F	L	F	L	F	L	F	L
Raw material A	480		560		800		100	
Raw material B		550		625		975		100
Labour ^a		120/2.5		160/2.5		220/2.5		100
Direct marketing costs	16		16		24		0	
INITIAL WORKING CAPITAL 1992								
Raw material A	60		60		80			
Raw material B		30		30		30		

Table 17: Direct production costs and initial working capital 1992

The procedure below describes the direct cost entries for shirts which include raw materials A (foreign), raw material B (local), labour (local) and direct marketing costs (foreign). A similar procedure is followed for blouses and dresses.

1. Choose the Extend Icon for the SHIRTS node. The DIRECT COSTS DATA STRUCTURE for shirts is displayed. There is a separate source for each of the two raw materials so that the RAW MATERIALS node is to be divided into two nodes to accommodate data for each.
2. Select the RAW MATERIALS node.
3. Choose **Insert** in the EDIT menu; the INSERT NEW ITEMS modal window is displayed.
4. Select the **User-defined** radio button.
5. Enter **2** in the NUMBER OF ITEMS entry field. (The **Insert** pushbutton becomes active as soon as [ENTER] is pressed.)

^a Number of workers/annual wage.

- 6. Use the iconic buttons and list box to edit the names of the two sub-nodes of the RAW MATERIALS node: **Raw materials A - shirts** and **Raw materials B - shirts**. At this point, the SHARE % can be left unchanged from the default settings.
- 7. Accept the insertion with the **OK** pushbutton.
- 8. Choose the Table Icon for **Raw materials A - shirts**. The RAW MATERIALS A - SHIRTS window is displayed with the STANDARD PRODUCTION COSTS panel by default.

COMFAR III Expert - [Production costs - Project1. (Industrial)]

FileModuleEditDisplayPrintGraphicsProjectSHARE?

Description:Raw materials A - Shirts

Product:Shirts

Currency:thousand US dollars

Escalation:0.00 % p.a.

Local

Foreign

Cost allocation...

Standard production costs

At nominal capacity of:724.00

Per unit of output

Quantity:480.0000

Variable part:100.00 %

Price:1.0000

Fixed part:0.00 %

Total:480.0000

Fixed costs:

Annual adjustments

	Quantity	Price	Total	Var.	Fix.
1/1991	0.00	0.00	0.00		
1/1992	60.00	1.00	60.00		
1/1993	0.00	0.00	0.00	100.00	0.00
4/1993	0.00	0.00	0.00	100.00	0.00
7/1993	0.00	0.00	0.00	100.00	0.00
10/1993	0.00	0.00	0.00	100.00	0.00
1/1994	0.00	0.00	0.00	100.00	0.00
1/1995	0.00	0.00	0.00	100.00	0.00

OK

Cancel

Figure 37: Raw materials A - shirts window - standard production costs panel

- 9. Select **thousand US dollars** as the currency using the CURRENCY drop-down list box.
- 10. Select the **Foreign** radio button.
- 11. Select the **Standard production costs** panel (default selection).
- 12. Select the **At nominal capacity** radio button; the nominal capacity for shirts of 724 appears in the display field.
- 13. Select the QUANTITY field and enter the value **480**.
- 14. Select the PRICE field and enter the value **1**.
- 15. Select the VARIABLE PART field and enter the value **100**.

- 16. The initial stocks of RAW MATERIALS A - SHIRTS is entered in the ANNUAL ADJUSTMENTS panel. Select the **Annual adjustments** panel.
- 17. Select the period **1/1992** (second year of construction) in the list box. Use the iconic buttons to enter **60** for the quantity and **1** for the price (see table 17, Initial working capital 1992).
- 18. Accept the entries with the **OK** pushbutton.
- 19. Enter all other direct production costs shown in table 17.

Direct costs are entered similarly for RAW MATERIAL B - SHIRTS and for LABOUR and DIRECT MARKETING COSTS. Of the three, only the first requires an entry for initial stocks.

INDIRECT PRODUCTION COSTS

Production costs which are not attributable directly to any of the three products are shown in table 18.

INDIRECT COST ITEM	FOREIGN	LOCAL	PERCENTAGE VARIABLE	
	US\$ (thousand)	NCU (thousand)	F	L
Factory supplies		450		100
Spare parts		250		0
Repair and maintenance		350		100
Royalties	24		0	
Factory overhead		1,320		0
Administrative overhead		500		0
Marketing overhead	24	300	0	50
INITIAL WORKING CAPITAL 1992				
Factory supplies		50		

Table 18: Indirect production costs

The first production year is divided into quarterly periods (see chapter III.C.2). For the breakdown of annual indirect costs by quarter see table 19.

All of the above data, including the INITIAL WORKING CAPITAL, are entered in subnodes of the INDIRECT COSTS node of the PRODUCTION COSTS structure. Data are entered for all indirect costs and initial inventories as ANNUAL ADJUSTMENTS. The indirect MARKETING OVERHEAD node is divided into two nodes, MARKETING OH - L(ocal) and MARKETING OH - F(oreign) using the INSERT feature of the EDIT menu. All indirect costs are allocated by the DIRECT COSTS allocation key.

QUARTER	ANNUAL COSTS (% of total)	
	LOCAL	FOREIGN
1/1993	10	10
4/1993	20	20
7/1993	30	50
10/1993	40	20

Table 19: Breakdown of annual indirect costs by quarter

The procedure below is described for FACTORY SUPPLIES. A similar procedure is applicable for all other items of indirect costs. The only difference between fixed and variable cost items is that the latter have to be adapted to the level of production (see table 20).

1. Choose the Extend Icon of the INDIRECT COSTS node. The INDIRECT COSTS DATA STRUCTURE is displayed.
2. Choose the Table Icon for the FACTORY SUPPLIES subnode of the INDIRECT COSTS node. The window for the INDIRECT COST item FACTORY SUPPLIES is displayed with the ANNUAL ADJUSTMENTS panel (the standard production cost option is not available for indirect costs).

Data entries for the variable indirect cost items, including FACTORY SUPPLIES, are shown in table 20 below. The price for all items is entered as 1.0 as the QUANTITY entries represent the value in thousand NCU. If a cost item has a variable part (factory supplies; repair, maintenance; marketing OH-L), it is calculated according to the level of production (55% for 1993). In the period commencing 1/1993, for example, the FACTORY SUPPLIES cost is $450 \times 0.10 \times 0.55 = 24.75$ thousand NCU, reflecting 10% of the annual cost in the first quarter of the year and 55% capacity utilization. The production increases to full capacity during the first four years of the project in the proportions 55, 75, 90 and 100%, respectively (see chapter III.C.9).

For ANNUAL ADJUSTMENTS the percentage variable or fixed (as indicated above) represents the part of the defined total assigned to the respective schedules (reports). The variable part of local marketing overhead costs (table 20) is calculated on the basis of the fixed cost of 150 thousand NCU per annum (50% of 300). For the year 1994, for example, the percentage variable is:

$$[(262.5 - 150)/262.5] \times 100 = 42.86\%$$

Similarly, the fixed marketing overhead expressed in foreign exchange is 24.0 thousand NCU per annum. The first year quarterly expenditures are 2.4, 4.8, 12 and 4.8 thousand NCU, respectively (the total is the annual expenditure of 24 thousand NCU, which is a fixed cost item).

	FACTORY SUPPLIES	REPAIR AND MAINTENANCE	ROYALTIES	MARKETING OH - LOCAL	
				AMOUNT	% VARIABLE
1/1992	50.00				
1/1993	24.75	19.25	1.32	23.25	35.48
4/1993	49.50	38.50	2.64	46.50	35.48
7/1993	74.25	57.75	6.60	69.75	35.48
10/1993	99.00	77.00	2.64	93.00	35.48
1/1994	337.50	262.50	18.00	262.50	42.86
1/1995	405.00	315.00	21.60	285.00	47.37
1/1996 - 1/2007	450.00	350.00	24.00	300.00	50.00

Table 20: Cost of indirect production items per period

COMFAR III Expert - [Production costs - Project1. (Industrial)]

FileModuleEditDisplayPrintGraphicsProjectSHARE?

Description:Factory supplies

Product:Indirect cost item

Currency:thousand NCULocalForeign

Escalation:0.00 % p.a.

Cost allocation...

Annual adjustments

405.0000

	Quantity	Price	Total	Var.	Fix.
1/1991	0.00	0.00	0.00		
1/1992	50.00	1.00	50.00		
1/1993	24.75	1.00	24.75	100.00	0.00
4/1993	49.50	1.00	49.50	100.00	0.00
7/1993	74.25	1.00	74.25	100.00	0.00
10/1993	99.00	1.00	99.00	100.00	0.00
1/1994	337.50	1.00	337.50	100.00	0.00
1/1995	405.00	1.00	405.00	100.00	0.00
1/1996	450.00	1.00	450.00	100.00	0.00
1/1997	450.00	1.00	450.00	100.00	0.00
1/1998	450.00	1.00	450.00	100.00	0.00
1/1999	450.00	1.00	450.00	100.00	0.00
1/2000	450.00	1.00	450.00	100.00	0.00
1/2001	450.00	1.00	450.00	100.00	0.00

OKCancel

Figure 38: Indirect costs window -factory supplies

3. Use the iconic buttons and data field to enter the above data.
4. Choose the **Cost allocation** pushbutton. The COST ALLOCATION modal window is displayed.
5. Select **Direct costs** in the ALLOCATION KEY list box.
6. Choose the **Select** pushbutton.

7. Accept the selection with **OK** in the COST ALLOCATION modal window. Control returns to the FACTORY SUPPLIES window.
8. Accept the entries with the **OK** pushbutton.
9. Enter all other indirect production costs shown in tables 18, 19 and 20.
10. Choose the Compress Icon of the PRODUCTION COSTS node.

9. Sales programme

The sales programme is defined in the windows corresponding to the subnodes of the SALES PROGRAMME node.

- Choose the Extend Icon of the SALES PROGRAMME node.

The structure of the sales programme is displayed with a node for each product defined before (see chapter III.C.3).

The projected sales programme is shown in table 21. All quantities of sales are shown in thousands of units; 30% of production is exported and is paid in dinars. The net price of exports is assumed to be equal to the domestic price at the official exchange rate; however, a 6% export charge is paid by the importer based on the FOB price.

PRODUCT	PRICE		YEAR/ % CAPACITY								
	DN	NCU	1993/55%		1994/75%		1995/90%		1996 - 2007/100%		
	F	L	F	L	F	L	F	L	F	L	TOTAL
Shirts	10	5	119.46	278.74	162.90	380.10	195.48	456.12	217.20	506.80	724
Blouses	8	4	135.30	315.70	184.50	430.50	221.40	516.60	246.00	574.00	820
Dresses	20	10	92.40	215.60	126.00	294.00	151.20	352.80	168.00	392.00	560

Table 21: Sales programme

Sales quantities are entered in thousands of units so that the prices are entered in absolute terms to conform to the accounting unit of thousand NCU.

Project planning during the first year of production (1993) is on a quarterly basis in order to investigate short-term liquidity during the start-up phase. It is anticipated that a seasonal pattern of sales will result in the following quarterly breakdown for each of the three product lines (table 22).

QUARTER	LOCAL	FOREIGN
1	10	10
2	20	20
3	30	50
4	40	20

Table 22: Annual sales

The procedure below describes entry of the sales programme data for exported shirts. The data entry for domestic sales of shirts and for both export and domestic sales of blouses and dresses is similar. A value-added tax of 20% is levied on domestic sales. This is entered as a sales tax on output in the case of VAT. The export duty of 6% described below is applicable to foreign sales and is also entered as sales tax.

1. Select the **SHIRTS** node by clicking into the description area of the corresponding node. A bold frame is drawn around the node.
2. Choose **Insert** in the EDIT menu. The INSERT NEW ITEMS modal window is displayed.
3. Select the **User-defined** radio button.
4. Select the NUMBER OF ITEMS field and enter **2**. Then press **[ENTER]** or **[TAB]** to activate the **Insert** pushbutton.
5. Choose the **Insert** pushbutton. The generic names of the two created nodes appear in the list box.
6. Use the iconic buttons and list box to define the two listed subnodes as **Shirts-exported** and **Shirts-domestic**.
7. Accept the entries with the **OK** pushbutton.
8. Apply the above procedure for the other products (blouses and shirts).
9. Choose the Table Icon for the SHIRTS-EXPORTED node. The SHIRTS-EXPORTED window is displayed with the SALES PROGRAMME panel.
10. Select **thousand dinar** from the CURRENCY drop-down list box.
11. Select the **Foreign** radio button.
12. Select the **Sales programme** tab. The SALES PROGRAMME list box is displayed (default).

The data in table 23 are entered for each production period (note that the price is expressed in thousand dinar).

PERIOD	QUANTITY ^a (thousands)	PRICE (thousand DN)
1/1993	11.95	10
4/1993	23.89	10
7/1993	59.73	10
10/1993	23.89	10
1/1994	162.90	10
1/1995	195.48	10
1/1996 - 1/2007	217.20	10

Table 23: Data for quantity and price

^a 55% of full capacity; 30% export sales; 10% in first quarter: $724 \times 0.55 \times 0.3 \times 0.1 = 11.946$

13. Use the iconic buttons and list box to enter the **Quantity** and **Price** for each production period.

An export charge of 6% is paid to the State trading organization. This is treated as a sales tax.

14. Select the **Sales tax and subsidies** tab. The SALES TAX AND SUBSIDIES list box is displayed in the SHIRTS-EXPORTED window.
15. Use the iconic buttons and list box to enter **6** in the SALES TAX - % column of the list box for each project period.
16. Accept the entries with the **OK** pushbutton.
17. Enter the other sales projections shown in tables 21 and 22.
18. Choose the Compress Icon of the SALES PROGRAMME node.

COMFAR III Expert - [Sales programme - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Shirts - exported

Product: Shirts (724.00)

Currency: thousand dinar

Escalation: 0.00 % p.a.

Local Foreign

11.9500

Sales programme Sales tax and subsidies

	Quantity	Price	Total
1/1993	11.95	10.00	119.50
4/1993	23.89	10.00	238.90
7/1993	59.73	10.00	597.30
10/1993	23.89	10.00	238.90
1/1994	162.90	10.00	1,629.00
1/1995	195.48	10.00	1,954.80
1/1996	217.20	10.00	2,172.00
1/1997	217.20	10.00	2,172.00
1/1998	217.20	10.00	2,172.00
1/1999	217.20	10.00	2,172.00
1/2000	217.20	10.00	2,172.00
1/2001	217.20	10.00	2,172.00
1/2002	217.20	10.00	2,172.00

OK Cancel

Figure 39: Shirts exported window

10. Working capital

Working capital requirements during the production phase are defined in terms of minimum days coverage or coefficient of turnover. Turnover is automatically adjusted for periods shorter than one year. For example, if the annual turnover is 12 the quarterly turnover is $12/4 = 3$.

1. Choose the Table Icon for the WORKING CAPITAL node. The WORKING CAPITAL window is displayed.
2. Select the **Inventory** tab. The INVENTORY list box is displayed.

INVENTORY ITEM	DAYS COVERAGE
Raw material A (f) - shirts	90
Raw material A (f) - blouses	90
Raw material A (f) - dresses	90
Raw material B (l) - shirts	30
Raw material B (l) - blouses	30
Raw material B (l) - dresses	30
Factory supplies	30
Spare parts	180
Work in progress	9
Finished products	15

Table 24: Working capital requirements

3. Use the iconic buttons and list box to enter the above values for inventory items shown in table 24. The corresponding ANNUAL TURNOVER values are displayed automatically.
4. Select the **Accounts receivable** tab.
5. Use the iconic buttons and list box to enter **30** for DAYS COVERAGE of ACCOUNTS RECEIVABLE for all products.
6. Select the **Cash-in-hand** tab.
7. Use the iconic buttons and list box to enter **15** for DAYS COVERAGE of CASH-IN-HAND - LOCAL and **0** for CASH-IN-HAND - FOREIGN.
8. Select the **Accounts payable** tab.
9. Use the iconic buttons and list box to enter **15** for DAYS COVERAGE of ACCOUNTS PAYABLE for all items.
10. Accept the entries with the **OK** pushbutton.

COMFAR III Expert - [Working capital - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

30.0000

Inventory Accounts receivable Cash-in-hand Accounts payable

	Days coverage	Coefficient of turnover
Indirect costs	---	---
Factory supplies	30.00	12.00
Spare parts consumed	180.00	2.00
Shirts	---	---
Raw materials	---	---
Raw materials A - Shirts	90.00	4.00
Raw materials B - Shirts	30.00	12.00
Work in progress	9.00	40.00
Finished product	15.00	24.00
Blouses	---	---
Raw materials	---	---
Raw materials A - Blouses	90.00	4.00
Raw materials B - Blouses	30.00	12.00
Work in progress	9.00	40.00
Finished product	15.00	24.00
Dresses	---	---
Raw materials	---	---
Raw materials A - Dresses	90.00	4.00

OK Cancel

Figure 40: Working capital window

11. Sources of finance

The initial investment is to be financed with 40% equity and 60% long-term loans. It is also estimated that short-term financing will be required during startup.

The SOURCES OF FINANCE node is extended to reveal the nodes in the structure.

- Choose the Extend Icon for the SOURCES OF FINANCE node. The SOURCES OF FINANCE structure is displayed in the browser, including nodes for EQUITY/RISK CAPITAL, LONG-TERM LOANS, SHORT-TERM FINANCE and PROFIT DISTRIBUTION.

EQUITY/RISK CAPITAL

Equity capital is to be provided by Growmania Garments Ltd. in NCU and by Garment Importers Ltd. in US\$. The shares of each partner are considered as preferential.

The breakdown of equity participation is provided in table 25.

	GROWMANIA GARMENTS LTD.	GARMENT IMPORTERS LTD.
Currency	thousand NCU	thousand US\$
Period: 1/1991	2,250	280
1/1992	550	280
Dividends	12% of paid-in equity after buildup of reserves (estimated to begin in 1995)	15% of paid-in equity after buildup of reserves (estimated to commence in 1995); 100% of dividends paid to be exported.

Table 25: Breakdown of equity participation

When extended, the EQUITY/RISK CAPITAL structure contains a separate node for each partner, for EQUITY SHARES and for SUBSIDIES, GRANTS. The procedure for the entry of equity data below is described for Garment Importers Ltd., the foreign partner. The procedure for entry of equity data for Growmania Garments Ltd. is similar.

- 1. Extend the EQUITY/RISK CAPITAL node by choosing the Extend Icon.
- 2. Choose the Table Icon for the GARMENT IMPORTERS LTD. node. The GARMENT IMPORTERS LTD. EQUITY CAPITAL window is displayed.
- 3. Select **thousand US dollars** from the CURRENCY drop-down list box.

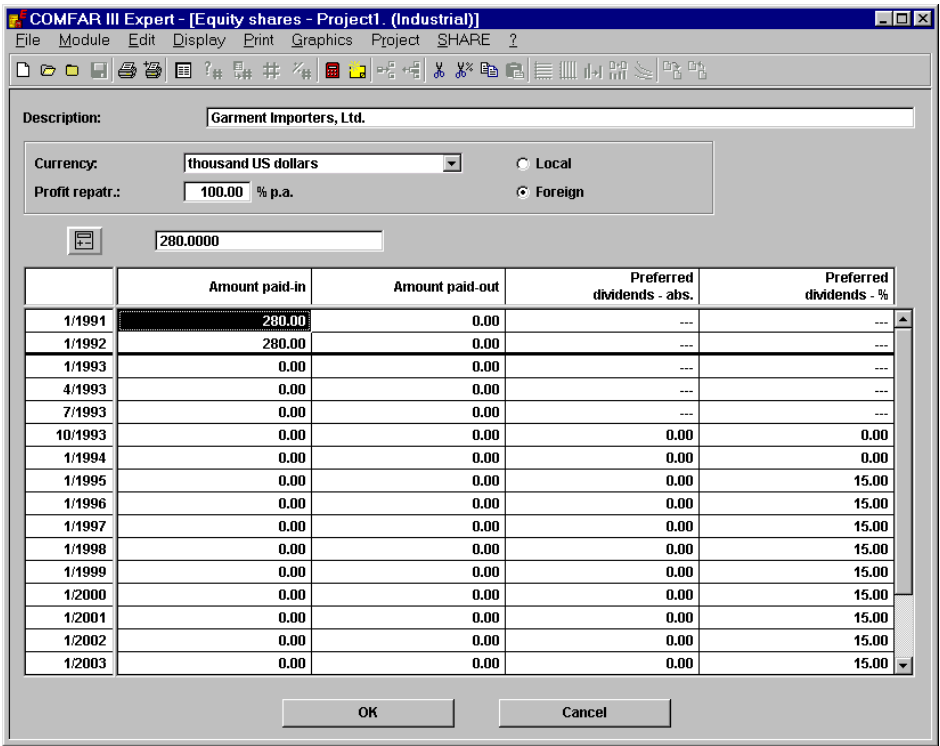


Figure 41: Equity window - Garment Importers Ltd.

4. Select the **Foreign** radio button.
5. Select the EXPORT OF PROFIT field and enter **100**.
6. Use the iconic buttons to enter the data shown in table 26 in the list box.

PERIOD	PAID-IN	PREFERRED DIVIDENDS
1/1991	280	
1/1992	280	
1/1993		
4/1993		
7/1993		
10/1993		
1/1994		
1/1995		15%
..		..
1/2007		15%

Table 26: Data for equity/risk capital

7. Accept the entries with the **OK** pushbutton.
8. Enter for the second partner (Growmania Garments Ltd.) the data shown in table 25.
9. Choose the Compress Icon for the EQUITY/RISK CAPITAL node.

LOANS

Data pertaining to the three loans planned for the project are shown in table 27. (The data for MONTH INTEREST PAID is shown automatically for all loans without user-defined profile.)

The SUPPLIER CREDIT and COMMERCIAL BANK loans are long-term loans. The BANK OVERDRAFT is a short-term loan.

The procedure below describes the entries for SUPPLIER CREDIT. The procedures for entry of the other two loans is similar. Short-term loans such as the bank overdraft are treated automatically as PROFILE loans for which the amounts and dates of all disbursements and reimbursements (negative values) are defined.

Two subnodes of the LONG-TERM LOANS node are added to accommodate the two long-term loans.

Source of loan	Supplier credit (foreign)	Commercial bank (local)	Bank overdraft (local)
Currency of loan	US\$	NCU	NCU
Type of repayment	Constant principle	Constant principle	Profile (negotiated)
Repayment period	Half-yearly	Half-yearly	Quarterly
Month interest paid	30/6	30/6	31/12
First repayment	30/6/1994	30/6/1995	N/A
Number of repayments	10	10	N/A
Interest rate, % p.a.	8	10	12
Capitalize interest during construction phase	Yes	Yes	No
Disbursements by period			
30/06/1991	576		
30/06/1992	1,504	2,800	
01/01/1993			50
01/04/1993			110
01/07/1993			250
01/10/1993			390
31/12/1994			(600)
31/12/1995			(200)

Table 27: Data pertaining to the three loans planned for the project

1. Select the LONG-TERM LOANS node by clicking into the description area of the node. A bold frame is drawn around the node.
2. Select **Insert** in the EDIT menu. The INSERT NEW ITEMS modal window is displayed.
3. Select the **User-defined** radio button.
4. Select the NUMBER OF ITEMS entry field and enter **2**, then press **[ENTER]**.
5. Choose the **Insert** pushbutton; the items appear in the list box with their generic names.
6. Use the iconic buttons to edit the names of the two nodes and to enter in the data field the descriptions: **Supplier credit** and **Commercial bank loan**.
7. Accept the entries with the **OK** pushbutton.
8. Choose the Table Icon for the SUPPLIER CREDIT node. The SUPPLIER CREDIT window is displayed.
9. Select **thousand US dollars** in the CURRENCY drop-down list box.
10. Select the **Foreign** radio button.
11. Select the **Conditions** tab. The CONDITIONS panel is displayed in the SUPPLIER CREDIT window.

COMFAR III Expert - [Loans - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: **Supplier credit**

Currency: **thousand US dollars** ☐ Local ☒ Foreign **Cost allocation...**

Total: **2,080.00**

	Amount
1/1991	576.00
1/1992	1,504.00
1/1993	0.00
4/1993	0.00
7/1993	0.00
10/1993	0.00
1/1994	0.00

Conditions | Disbursements | Interest | Fees

Type: **Constant principal**

Repayment: **Half-yearly**

Month interest paid: **30.6**

Disbursements until: **30/6/1994** (dd/mm/yyyy)

First repayment: **30/6/1994** (dd/mm/yyyy)

Number of repayments: **10**

Period of repayment: **5** years **0** months

Last repayment: **31/12/1998** (dd/mm/yyyy)

OK **Cancel**

Figure 42: Supplier credit window with conditions panel

12. Select **Constant principal** from the TYPE drop-down list box.
13. Select **Half-yearly** from the REPAYMENT drop-down list box.

For constant principal and annuity loans the interest is paid with the principal on the repayment dates in accordance with the selections for FIRST REPAYMENT and REPAYMENT. For these types of loans the MONTH INTEREST PAID drop-down list box is inactive and displays the day of the year of the first repayment (31/12). (INTEREST DUE dates are calculated regressively according to the number and lengths of repayments.)

The DISBURSEMENTS UNTIL display field provides the date of last possible disbursement. Disbursements can be defined for any date up to and including the end of the disbursement phase. Only those project periods falling into this time span are displayed in the AMOUNTS list box. It is not possible to define a disbursement at a date not within the disbursement phase. For constant principal loans the DISBURSEMENTS UNTIL date is automatically defined by the FIRST REPAYMENT date and the REPAYMENT. The DISBURSEMENTS UNTIL date for annuity loans is one REPAYMENT period (yearly, half-yearly, quarterly or monthly as defined in the REPAYMENT drop-down list box) prior to the FIRST REPAYMENT date.

14. Select the FIRST REPAYMENT field and enter **30/06/1994**.

15. Select the **NUMBER OF REPAYMENTS** field and enter **10**. The **LENGTH OF REPAYMENT** period (5 years, 0 months) and **LAST REPAYMENT** (31/12/1998) are display fields only.
16. Select the **Disbursements** tab. The **DISBURSEMENTS** panel is displayed in the **SUPPLIER CREDIT** window.
17. Use the **EDIT** panel to enter the two disbursements **30/6/1991, 576** and **30/6/1992, 1,504**, respectively, in the **AMOUNT** list box. When the **Accept Edit** pushbutton is chosen for each entry, the data appear in the **DISBURSEMENTS** list box. Note that the disbursements are expressed in thousand US\$. Also, the total amount of defined disbursements is displayed in the **TOTAL** display field.
18. Select the **Interest** tab. The **INTEREST** panel is displayed in the **SUPPLIER CREDIT** window.
19. Use the **EDIT** panel to enter the **Date** (effective date) and **Rate** (interest, % per annum) for the supplier credit, **1/1/1991** and **8**.
20. Select the **Capitalize interest until** check box (selected by default). The date of the end of the construction period is shown by default.
21. Select the **Depreciation** pushbutton; the **DEPRECIATION** modal window is displayed. Enter **Linear to scrap** as depreciation type and **10** for the depreciation rate, then accept the entry with **OK**.
22. Select the **Cost allocation** pushbutton. Check whether **Direct costs** is shown in the **ALLOCATION KEY SELECTED** entry field of the **COST ALLOCATION** modal window. Select **Direct costs** if another allocation key was selected. Select the **OK** pushbutton to return to the **LOAN** window.
23. Accept the entries with the **OK** pushbutton.
24. Enter the data shown in table 27 for the second long-term loan (commercial bank loan) and for short-term finance (bank overdraft).
25. Choose the Compress Icon of the **LONG-TERM LOAN** node.

PROFIT DISTRIBUTION

Profits over and above the preferred dividends are to be distributed between the two partners after setting aside a reserve of 55% of net profit after tax. The distribution is favourable to the foreign partner, who provides only 25% of the equity but receives 40% of the additional profit distribution (ordinary dividends).

1. Choose the **Table** Icon for the **PROFIT DISTRIBUTION** node. The **PROFIT DISTRIBUTION** window is displayed.
2. Select the **Retained profit** line and use the iconic buttons and data field to enter the value **55** as the percentage of retained profit. The **PROFIT DISTRIBUTED (IN %)** line automatically displays $100 - 55 = 45\%$.

The lines for **PREFERRED DIVIDENDS** and **REMAINING PROFIT DISTRIBUTED** are displayed for information only.

3. Select consecutively the **Export of profit** cell for Growmania Garments Ltd. and for Garment Importers Ltd. and use the iconic buttons and data field to enter **0** and **100**, respectively.
4. Select all cells (for each operating year) in the Growmania Garments Ltd. line (except the EXPORT OF PROFIT cell) and enter **60** using the iconic buttons and data field; also select the corresponding cells for Garment Importers Ltd. and enter **40**.
5. Accept the entries with the **OK** pushbutton.
6. Choose the Compress Icon of the SOURCES OF FINANCE node.

COMFAR III Expert - [Profit distribution - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Profit distribution

55.0000

	Repat. of profit	1/1993	1/1994	1/1995	1/1996	1/1997
Retained profit (in %)	---	55.00	55.00	55.00	55.00	55.00
Profit distributed (in %)	---	45.00	45.00	45.00	45.00	45.00
- Preferred dividends						
= Remaining profit distributed						
Growmania Garments, Ltd.	0.00	60.00	60.00	60.00	60.00	60.00
Garment Importers, Ltd.	100.00	40.00	40.00	40.00	40.00	40.00
Equity shares	0.00	0.00	0.00	0.00	0.00	0.00

OK Cancel

Figure 43: Profit distribution window

12. Income (corporate) tax

The country uses a graduated tax system for industrial enterprises with two brackets. Below NCU 50,000 of taxable profit the tax rate is 25% and above this level the income tax rate is 50%. The project is granted a tax holiday of four years. Losses can be carried forward for up to three years.

- 1. Choose the Extend Icon for the TAX, ALLOWANCES node. The TAX, ALLOWANCE structure is displayed.
- 2. Choose the Table Icon for the INCOME (CORPORATE) TAX node. The INCOME (CORPORATE) TAX window is displayed.

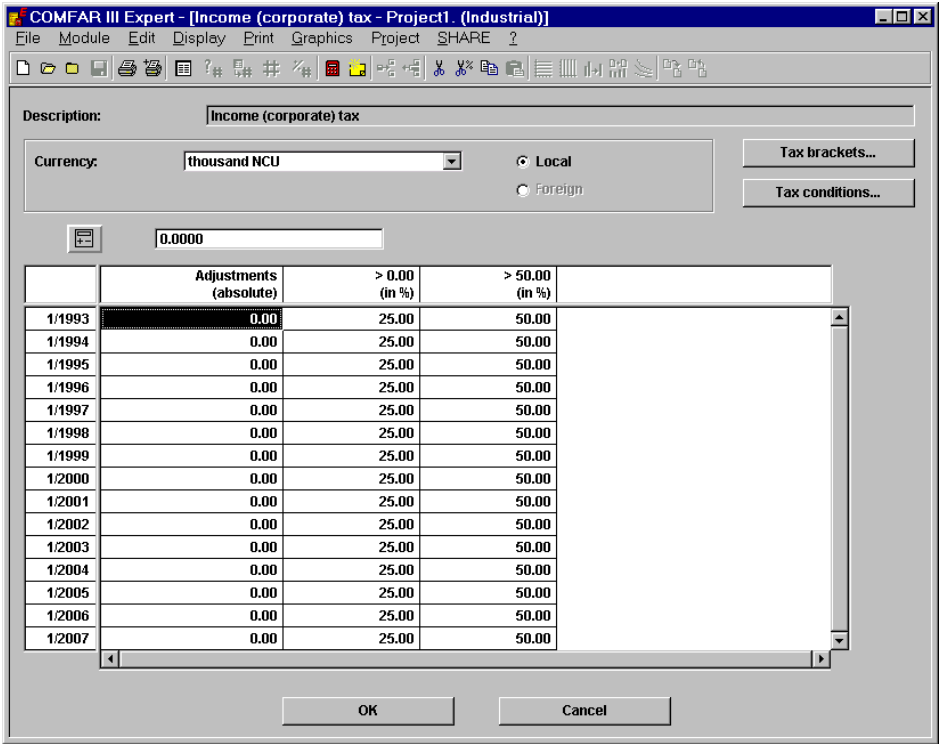
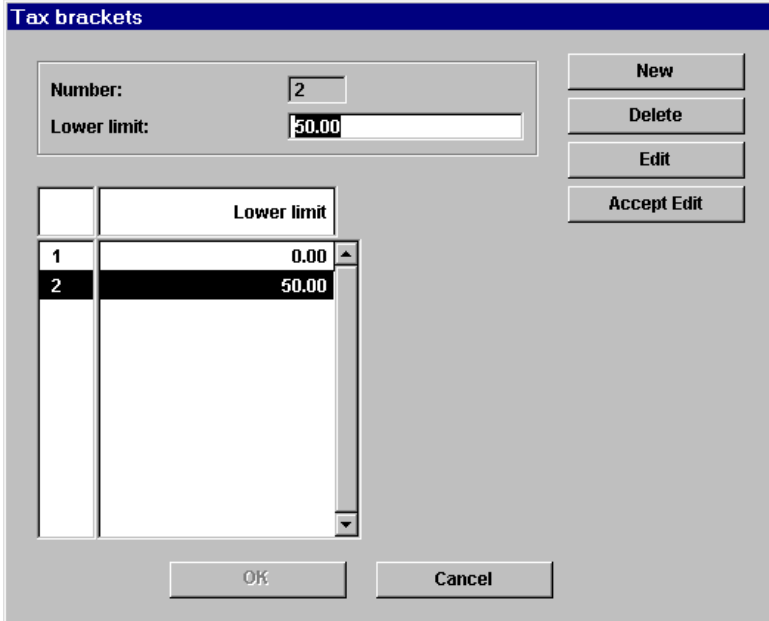


Figure 44: Income (corporate) tax window

- 3. Select **thousand NCU** in the CURRENCY drop-down list box (this is the default value).
- 4. The **Local** radio button is active only (tax is a local item).
- 5. Choose the **Tax brackets** pushbutton. The TAX BRACKETS modal window is displayed.
- 6. Use the **Edit** pushbutton and entry field to enter **50** as the lower limit of the second tax bracket (the first tax bracket has a lower limit of **0** by default).

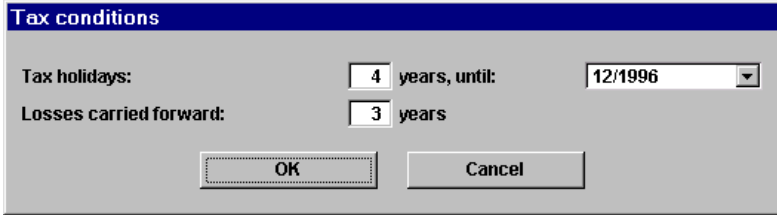


The 'Tax brackets' modal window has a title bar 'Tax brackets'. It contains two input fields at the top: 'Number:' with a value of '2' and 'Lower limit:' with a value of '50.00'. To the right of these fields are four buttons: 'New', 'Delete', 'Edit', and 'Accept Edit'. Below the input fields is a table with two columns. The first column is labeled '1' and the second column is labeled 'Lower limit'. The table contains two rows: the first row has '1' in the first column and '0.00' in the second column; the second row has '2' in the first column and '50.00' in the second column. At the bottom of the window are two buttons: 'OK' and 'Cancel'.

	Lower limit
1	0.00
2	50.00

Figure 45: Tax brackets modal window

7. Accept the entries in the TAX BRACKETS modal window with the **OK** pushbutton. Control returns to the INCOME (CORPORATE) TAX window.
8. Choose the **Tax conditions** pushbutton. The TAX CONDITIONS modal window is displayed.



The 'Tax conditions' modal window has a title bar 'Tax conditions'. It contains two input fields: 'Tax holidays:' with a value of '4' years, until: '12/1996' and 'Losses carried forward:' with a value of '3' years. At the bottom of the window are two buttons: 'OK' and 'Cancel'.

Figure 46: Tax conditions modal window

9. Select the TAX HOLIDAYS - YEARS, UNTIL entry field and enter **4** (alternatively, select the years until date **12/1996** using the UNTIL drop-down list box).
10. Select the LOSSES CARRIED FORWARD entry field and enter **3**.
11. Accept the entries with the **OK** pushbutton in the TAX CONDITIONS modal window. Control returns to the INCOME (CORPORATE) TAX window.
12. Use the iconic buttons to enter in the data fields **25** for all periods in the **> 0.00 (in%)** tax bracket column and **50** for all periods in the **> 50.00 (in %)** (corresponding to 50 thousand NCU) tax bracket column.
13. Accept the entries with the **OK**.
14. Choose the Compress Icon of the TAX, ALLOWANCES node.

Input data can be saved for further reference. To save your data:

1. Choose **Save project as** in the FILE menu. The SAVE PROJECT AS modal window is displayed.
2. Enter the name of the project, **GROWMAN1.C30**, in the FILE NAME entry field (please refer to the note given in chapter II. *Tomato canning*)
3. Save the file by choosing **SAVE** in the SAVE PROJECT AS modal window. Control returns to the browser.

D. ECONOMIC DATA ENTRY

Nodes in the financial structure which require adjustments for economic appraisal or value-added analysis are assigned with the ASSIGN ECONOMIC ANALYSIS feature of the EDIT menu.

Only those items from the financial analysis that have a significant impact on the economic appraisal should be selected. The most important candidates for adjustment have both large value and price distortion. In this case all nodes to be adjusted for economic value are assigned from the EDIT menu using the ASSIGN ECONOMIC ANALYSIS feature.

It is recommended in the *Reference Manual* that only one of the available approaches to cost-benefit analysis, economic appraisal or value-added analysis, should be attempted in a single run of COMFAR. In this case ^b the value-added for the project is determined. In the Sahara Mills case study (chapter IV of this *Manual*) the cost-benefit approach is applied.

The economic assumptions and steps necessary to adjust the economic values are described below. Some of the conditions and assumptions which do not have a significant impact on the economic appraisal are included for didactic purposes only.

For value-added analysis the only information required in addition to the financial data is the identification of indirect taxes on input and the value-added included in up to three rounds of decomposition of inputs. Some adjustments of the data structure are required for analysis of the foreign exchange impact.

The data structure for an opportunity study is of limited detail with respect to components of value-added. To maintain information concerning the distribution of value-added, it is necessary to structure the data so that all elements of value-added content are properly calculated. It is useful to refer to the discussion of value-added in the *Reference Manual*, chapters X.D.1 and XII.A, which describe the calculation rules. At the opportunity level, for example, the only nodes for which wages and salaries data are taken into account are LABOUR and LABOUR OVERHEADS and any user-defined sub-

^b For the entry of economic data the GROWMAN1.C30 file may be taken instead of the data file created by the user. The completed economic data entry is saved in file GROWMAN2.C30.

nodes. Any labour costs defined, apart from those directly associated with these nodes, should be transferred to either of these nodes or their subnodes.

Prior to the economic data input the relevant information has to be entered in the PROJECT IDENTIFICATION node.

1. Move the mouse cursor inside the browser overview frame. The cursor changes to the move cursor. Drag the frame so that the PROJECT INPUT DATA node and PROJECT IDENTIFICATION node are displayed in the browser.
2. Choose the Table Icon for the PROJECT IDENTIFICATION node. The PROJECT IDENTIFICATION window is displayed.
3. Select the PROJECT DESCRIPTION multiple-line entry field and edit the descriptive text (**part2, financial and economic analysis**).
4. Select the **Economic analysis** check box.
5. Choose **OK** in the PROJECT IDENTIFICATION window. Control returns to the browser. The ECONOMIC ANALYSIS node is displayed.

1. Indirect taxes on investment (average values per item)

It is necessary to transfer only the LOCAL nodes to the economic browser. When a node is transferred to the economic browser, any subnodes (standard and user-defined) are also transferred.

The following procedure is applied to the LAND node and to all other LOCAL FIXED INVESTMENT nodes.

1. Choose (with the right mouse button) the Extend Icon of the FIXED INVESTMENT COSTS node.
2. Select one of the local investment nodes in the financial browser by clicking in the description area of the node.
3. Use **Assign economic analysis** in the EDIT menu to transfer the node to the economic browser.
4. Choose the Compress Icon of the FIXED INVESTMENT COSTS node.

After assigning all local investment nodes to the economic browser it is best to fully extend the INPUTS node of the economic browser to observe the data structure.

1. Choose the Extend Icon of the ECONOMIC ANALYSIS node.
2. Choose the Extend Icon of the INPUTS node.
3. Choose the Extend Icon of the FIXED INVESTMENT COSTS node with the right mouse button, seven nodes (local investments) are displayed.

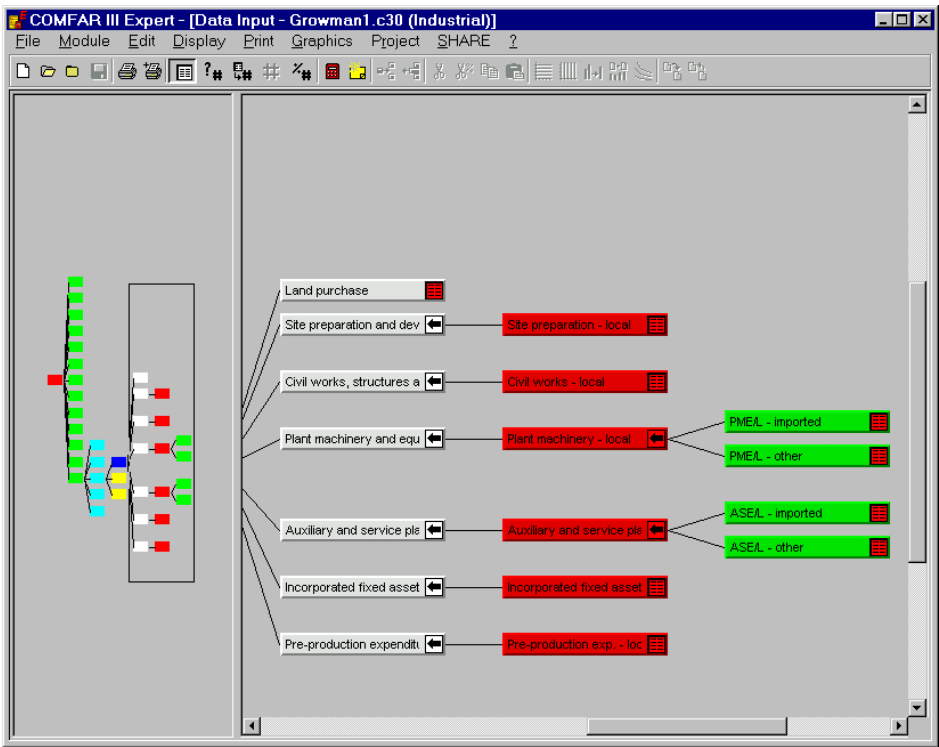


Figure 47: Inputs node fully extended with transferred items

The indirect taxes for each local fixed investment item are defined by the following procedure using the TAXES/DUTIES INCLUDED shown in table 28 for each item.

ITEM	TAXES/DUTIES INCLUDED (%)
Land	5
Local investment (other)	10

Table 28: Indirect taxes on investment

1. Choose the Table Icon of a local investment node in the economic browser. The respective ADJUSTMENT OF INPUTS window is displayed.
2. Select the TAXES/DUTIES INCLUDED entry field and enter the percentage indirect taxes as shown above (**5** for land and **10** for all other local fixed investment items).
3. Accept the entries with the **OK** pushbutton.
4. Choose the Compress Icon of the FIXED INVESTMENT COSTS node of the economic browser.

COMFAR III Expert - [Adjustment of inputs - Growman1.c30 (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Land purchase

Origin: Fixed investment costs

Currency: thousand NCU ☒ Local ☐ Foreign

	Period	Quantity	Price	Total
First appearance	1/1991	1.00	20.00	20.00
Reference year	1/1995	1.00	0.00	0.00

Taxes/duties included: 5.00 %

Value-added included: 0.00 % 0.00 % 0.00 % Rest: 100.00 %

☒ Non-traded ☐ Tradable

☒ Consumer price (including taxes and duties)

☐ Producer price: NCU

Financial value: 20.00 NCU

Adjustment factor: 1.00

Adjusted market value: 20.00 NCU

Foreign currency exposure: 0.00 %

Calculation support...

☐ Changed

OK Cancel

Figure 48: Adjustment of inputs window

2. Indirect taxes on sales (value-added and export duties)

ITEM	FINANCIAL VALUE (%)
Value-added tax on domestic sales	20
Export duties	6

Table 29: Indirect taxes on sales

The taxes shown in table 29 are included as SALES TAXES in the financial data for domestic sales. No further adjustment is necessary.

3. Labour content of factory and administrative overheads; indirect tax on skilled labour

The indirect tax on skilled labour is 20% of wages.

Labour content of factory and administrative overheads is defined by transferring appropriate portions of the data in the FACTORY OVERHEAD and ADMINISTRATIVE OVERHEAD nodes to the corresponding LABOUR nodes: 50% and 70%, respectively, constitute skilled labour and 40% and 20%, respectively, constitute unskilled labour. All of the direct costs of labour for the three products are considered unskilled.

The FACTORY OVERHEAD and ADMINISTRATIVE OVERHEAD subnodes in the INDIRECT COSTS node of the financial browser are initially divided further into a LABOUR and a NON-LABOUR COSTS node. Afterwards each of these LABOUR nodes is split further into a SKILLED LABOUR and an UNSKILLED LABOUR subnode. The three LABOUR subnodes of the DIRECT COSTS nodes of the financial browser (shirts, blouses and dresses) also have to be divided into subnodes representing SKILLED and UNSKILLED LABOUR (needed for economic appraisal). However, since all direct labour costs are for unskilled labour, the three subnodes for direct skilled labour do not contain entries.

The following procedure is described for the FACTORY OVERHEAD and ADMINISTRATIVE OVERHEAD nodes. The procedure transfers costs from each node to the SKILLED LABOUR, UNSKILLED LABOUR and NON-LABOUR COSTS nodes as shown in table 30 (100% fixed costs).

COST ITEM	SKILLED LABOUR (%)	UNSKILLED LABOUR (%)	NON-LABOUR (%)
Factory overhead	50	40	10
Administrative overhead	70	20	10

Table 30: Indirect taxes on skilled labour

1. Choose the Extend Icon of the PRODUCTION COSTS node.
2. Choose the Extend Icon of the INDIRECT COSTS node.
3. Select the Table Icon of the FACTORY OVERHEAD COSTS node (subnode of the INDIRECT PRODUCTION COST node).
4. Select the entire list box by clicking in the upper left cell.
5. Choose **Copy** from the EDIT menu to copy the data contained in the FACTORY OVERHEAD COSTS node to the clipboard for further processing. Then choose the **OK** pushbutton to leave the PRODUCTION COSTS window.
6. Select the FACTORY OVERHEAD COSTS node by clicking in the description area.
7. Choose **Insert** in the EDIT menu; the INSERT NEW ITEMS window is displayed.
8. Select the According to level of feasibility study radio button.
9. Choose the **Insert** pushbutton. Five lines (various labour and non-labour cost items) appear in the list box.
10. Click in the number field of the last (fifth) line. The **Delete** pushbutton becomes active. Delete the lines five, four, three and two.
11. Select the **User-defined** radio button; enter **1** for the number of items and select then the **Insert** pushbutton. Then change the description to **FOH - non-labour**.
12. Use the **Share, %** column in the INSERT NEW ITEMS modal window to transfer **90%** of the overhead costs to the SALARIES, WAGES node and **10%** to the FOH - NON-LABOUR node.
13. Accept the entries with the **OK** pushbutton.

The two newly defined subnodes of the FACTORY OVERHEAD COSTS node appear in the browser. The SALARIES, WAGES node is now further expanded to include subnodes for SKILLED and UNSKILLED LABOUR, and the appropriate portions of the costs of skilled and unskilled labour are then transferred to the corresponding skilled and unskilled labour nodes. The procedure is described for the SALARIES, WAGES of the FACTORY OVERHEAD COSTS node and is similar for the administrative labour costs using the portions of the total costs as described in table 30.

14. Select the Table Icon of the SALARIES, WAGES node.
15. Select the entire list box by clicking in the upper left cell.
16. Choose **Paste** from the EDIT menu; the PASTE modal window is displayed.
17. Select the PASTE entry field and paste **100%** of the values copied to the clipboard before (total factory overhead costs) into the SALARIES, WAGES list box. (See step 4 above.)
18. Accept the **Paste** operation with the **OK** pushbutton.
19. Select the SALARIES, WAGES node by clicking in the description area.
20. Choose **Insert** in the EDIT menu; the INSERT NEW ITEMS window is displayed.
21. Select the **User-defined** radio button and create two subnodes: FOH - SKILLED LABOUR and FOH - UNSKILLED LABOUR. Use the **Share, %** column in the INSERT NEW ITEMS modal window to transfer **50%** of the overhead costs to the FOH - SKILLED LABOUR node and **40%** to the FOH - UNSKILLED LABOUR node. (**10%** of the original costs pasted into the SALARIES, WAGES node are contained in the NON-LABOUR node.)
22. Accept the browser structure and entries with the **OK** pushbutton.
23. Apply a similar procedure to divide the administrative overhead costs into skilled labour, unskilled labour and non-labour costs (table 30).

It is important to maintain information pertaining to job creation. For this reason the total amounts in the four created LABOUR nodes must be adjusted to reflect the number of jobs created in each category and the annual wages for purposes of employment analysis. Annual wages for each labour category are shown in table 31.

CATEGORY	ANNUAL WAGE (thousand NCU)	SPLIT RATE (percentage)
Skilled factory	5	80
Unskilled factory	2.5	60
Skilled administrative	10	90
Unskilled administrative	5	80

Table 31: Annual wages

A procedure is described for the FOH - SKILLED LABOUR node and is applicable similarly to the other three LABOUR nodes.

1. Select the Table Icon for the FOH - SKILLED LABOUR node of the financial browser.
2. Use the **Split** feature of the EDIT menu to split **80%** of the value in the QUANTITY column of the list box (this effectively divides the QUANTITY by a factor of 5); assign a price of **5.0** for each period.

The data in the list box now reflect the number of jobs created and the annual wage.

3. Apply a similar procedure for the other SKILLED LABOUR nodes (see table 31).

The included taxes/duties are defined for skilled labour. The procedure is described for the FOH - SKILLED LABOUR node and is similar for the AOH - SKILLED LABOUR node.

1. Select the FOH - SKILLED LABOUR node by clicking into the description area of the node.
2. Select **Assign economic analysis** from the EDIT menu to transfer the node to the economic browser.
3. Extend the PRODUCTION COSTS node in the economic browser (inputs) fully by clicking the Extend Icon with the right mouse button.
4. Select the Table Icon for the FOH - SKILLED LABOUR node in the economic browser.
5. Select the TAXES/DUTIES INCLUDED entry field and enter **20**.
6. Accept the entries with the **OK** pushbutton.
7. Apply a similar procedure for the AOH - SKILLED LABOUR node.
8. Choose the Compress Icon of the INDIRECT COSTS node of the financial browser.

The three LABOUR subnodes of the direct costs nodes have now to be divided into skilled and unskilled labour. All direct labour costs will be treated as unskilled labour. The procedure is described for the SHIRTS - LABOUR node, but is similar for the labour nodes of the two other products.

1. Choose the Extend Icon of the PRODUCTION COSTS - SHIRTS node.
2. Select the LABOUR node by clicking into the description area.
3. Choose **Insert** from the EDIT menu; the INSERT NEW ITEMS modal window is displayed.
4. Select the **According to level of feasibility study** radio button.
5. Choose the **Insert** pushbutton. A line for skilled labour and unskilled labour appears in the list box.

6. Use the iconic buttons and data field to enter in the **SHARE** column **0%** for skilled labour and **100%** for unskilled labour. The direct labour cost data will be transferred accordingly to the respective **UNSKILLED LABOUR** node.
7. Accept the entries with the **OK** pushbutton.
8. Choose the Compress Icon of the **PRODUCTION COSTS - SHIRTS** node.
9. Apply this procedure for the other direct labour costs.
10. Choose the Compress Icon of the **PRODUCTION COSTS** node in the financial browser.

4. Foreign parts in local equipment

To account for 20% foreign parts in locally purchased equipment, the local equipment nodes are divided into subnodes to isolate the imported component. The procedure is described for the **PLANT MACHINERY AND EQUIPMENT - LOCAL** node and is applicable similarly to the **AUXILIARY AND SERVICE PLANT EQUIPMENT - LOCAL** node.

1. Select the Extend Icon of the **FIXED INVESTMENT COSTS** node in the financial browser.
2. Select the Extend Icon of the **PLANT MACHINERY AND EQUIPMENT** node.
3. Select the **PLANT MACHINERY AND EQUIPMENT - LOCAL** node by clicking in the description area.
4. Use the **Insert** feature of the **EDIT** menu to create the two subnodes, **PME/L - imported** and **PME/L - other**.
5. Use the **Share, %** column in the **INSERT NEW ITEMS** modal window to transfer **20%** of the total to the first and **80%** to the second subnode (these entries do not automatically total 100%).
6. Accept the entries with the **OK** pushbutton.
7. Choose the Table Icon for the **PME/L - IMPORTED** node.
8. Select the **Foreign** radio button in the **PME/L - IMPORTED** window.
9. Accept the entries with the **OK** pushbutton.
10. Select the **AUXILIARY AND SERVICE PLANT EQUIPMENT - LOCAL** node and apply the same procedure to separate the foreign components.
11. Choose the Compress Icon of the **FIXED INVESTMENT COSTS** node.

This procedure includes the imported component in the foreign currency effect calculations. The value may be expressed in any of the defined currencies. No shadow pricing of currencies is necessary for value-added calculations.

5. Value-added content of local plant machinery and equipment and auxiliary and service plant equipment

All of the fixed investment nodes are divided (above) into foreign and local components. The nodes representing local equipment costs were divided above into IMPORTED and OTHER content. The imported content is clearly a cost to the economy. However, the OTHER content includes some value-added that is attributable to the project.

A portion of the value of OTHER (non-imported) local plant machinery and equipment (25%) represents value-added attributable to the project (domestic content which would otherwise not be produced). Of the remaining 75%, further analysis indicates that 40% represents other domestic content attributable to the project. The balance of the value is either an imported content or not attributable to the project.

35% of the OTHER (non-imported) local auxiliary and service plant equipment represents value-added attributable to the project (domestic content which would not otherwise be produced). The remainder is either imported or not directly attributable to the project.

All LOCAL fixed investment nodes have already been transferred to the economic browser; any created subnodes, including PME/L - OTHER and ASE/L - OTHER, are automatically transferred.

1. If not already done, extend the INPUTS node in the economic browser one level by clicking the Extend Icon with the left mouse; then click the FIXED INVESTMENT COSTS node with the right mouse button to reveal the full structure.

The procedure below is described for the PME - L/OTHER node in the cost-benefit section of the browser. A similar procedure is applicable to the ASE/L - OTHER (auxiliary and service plant equipment - local/other) node (however, only one round of decomposition).

2. Choose the Table Icon for the PME/L - OTHER node in the economic browser. The ADJUSTMENT OF INPUTS window for the PME/L - OTHER node is displayed (see above).
3. Select the VALUE-ADDED INCLUDED entry fields and successively enter **25%** and **40%**, respectively.
4. Accept the entries with the **OK** pushbutton.

6. Imported content of raw material - local

The imported content of RAW MATERIAL B - SHIRTS is 30%, of which 12% import duties are included; 40% of the remainder is domestic value-added attributable to the project and the balance is domestic input not attributable to the project (drawn from other potential users).

The RAW MATERIAL B - SHIRTS node in the financial browser is divided into foreign and local components. The local portion is then adjusted for its value-added content.

The procedure describes adjustments for RAW MATERIAL B - SHIRTS.

1. Choose the Extend Icon of the PRODUCTION COSTS node.
2. Choose the Extend Icon of the SHIRTS node.
3. Choose the Extend Icon of the RAW MATERIALS node.
4. Select the RAW MATERIALS B node by clicking in the description area.
5. Use the **Insert** feature of the EDIT menu to create the two subnodes RMB/L - SHIRTS - IMPORTED and RMB/L - SHIRTS - OTHERS.
6. Use the **Share, %** column in the INSERT LINES modal window to transfer **30%** of the value to the RMB/L - SHIRTS - IMPORTED node and the balance of **70%** to the RMB/L - SHIRTS - OTHERS node.
7. Accept the entries with the **OK** pushbutton.
8. Choose the Table Icon for the RMB/L - SHIRTS - IMPORTED node.
9. Select the **Foreign** radio button in the RMB/L - SHIRTS - IMPORTED window.
10. Accept the entries with the **OK** pushbutton.
11. Use **Assign Economic Analysis** in the EDIT menu to transfer the RMB/L - SHIRTS - IMPORTED and RMB/L - SHIRTS - OTHERS nodes to the economic browser.
12. Fully extend the SHIRTS node in the economic browser by clicking with the right mouse button (**Inputs, Production costs**)
13. Choose the Table Icon for the RMB/L - SHIRTS - IMPORTED node in the economic browser.
14. Select the TAXES/DUTIES INCLUDED entry field and enter **12%**.
15. Accept the entries with the **OK** pushbutton.
16. Choose the Table Icon for the RMB/L - SHIRTS - OTHERS node in the economic browser.
17. Select the VALUE-ADDED INCLUDED entry field and enter **40**.
18. Accept the entries with the **OK** pushbutton.
19. Select the Compress Icon of the PRODUCTION COSTS node in the economic browser.

7. Import substitution - 50% of local sales

Without the project, 50% of the garments produced for local sale would have been imported. The value-added for the imported garments is 10% of the import price, which is 5% above the domestic price.

Import substitution contributes to the foreign exchange impact of the project and should be taken into account. Each local product node in the financial browser is transferred to the economic browser.

The procedure is described for shirts. A similar procedure is applicable to blouses and dresses.

1. Select the Extend Icon of the SALES PROGRAMME node in the financial browser with the right mouse button.
2. Select the SHIRTS - DOMESTIC node by clicking into the description area.
3. Use **Assign Economic Analysis** in the EDIT menu to transfer the SHIRTS-DOMESTIC node to the economic browser.
4. Select the Extend Icon of the OUTPUTS node in the economic browser with the right mouse button.
5. Choose the Table Icon for the SHIRTS - DOMESTIC node.
6. Select the **Tradable** radio button in the CATEGORY panel.
7. Select **Importable** in the drop-down list box.
8. Select **thousand US dollars** in the CURRENCY drop-down list box.
9. Select the CIF entry field and enter the import price in thousand US\$. For shirts this is $5 \times 1.05 \times 0.8 = 4.2$; it is **3.36** and **8.4** for blouses and dresses, respectively.
10. Select the IMPORTABLE entry field and enter **50%**.
11. Accept the entries with the **OK** pushbutton.

8. Employment effects

In addition to direct employment created, input-supplying projects are also expanded to meet the requirements of the new project. The data in table 32 apply to the indirect job creation for the input-supplying projects (all monetary amounts in thousand NCU).

	NUMBER OF JOBS	WAGE BILL & INVESTMENT
Input-supplying projects, unskilled labour	300	810
Input-supplying projects, skilled labour	75	338
Output-using projects, new investments	-	5,250

Table 32: Data for indirect job creation

1. Select the Extend Icon of the INDIRECT EFFECTS node in the economic browser.
2. Choose the Table Icon for the EMPLOYMENT EFFECTS node. The EMPLOYMENT EFFECTS window is displayed.

COMFAR III Expert - [Employment effects - Growman1.c30 (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description:

Currency: ☒ Local ☐ Foreign

	Number of workers	Wage bill and investment
Input-supplying projects		
Unskilled labour	300.00	810.00
Skilled labour	75.00	338.00
Additional investment	---	0.00
Output-using projects		
Unskilled labour	0.00	0.00
Skilled labour	0.00	0.00
Additional investment	---	5,250.00

OK Cancel

Figure 49: Employment effects window

3. Select **thousand NCU** in the CURRENCY drop-down list box.
4. Only the **Local** radio button is active.
5. Use the iconic buttons and entry field to enter the data from table 32 in the list box.
6. Accept the entries with the **OK** pushbutton.
7. Select the Compress Icon of the Economic analysis node. In case there are any other structures (nodes) still extended beyond the first browser level (green nodes), select the appropriate Compress Icons.

E. RESULTS

RESULTS are the pro-forma financial and economic reports (schedules) and graphs produced by the program from calculations performed on the corresponding data entries. The results are produced in a series of steps:

- Select results
- Calculations
- Show results

The results can also be printed either on-line or in batch mode.

1. Select results

Results to be produced are selected from the select results browser.

- Choose **Select Results** in the MODULE menu.

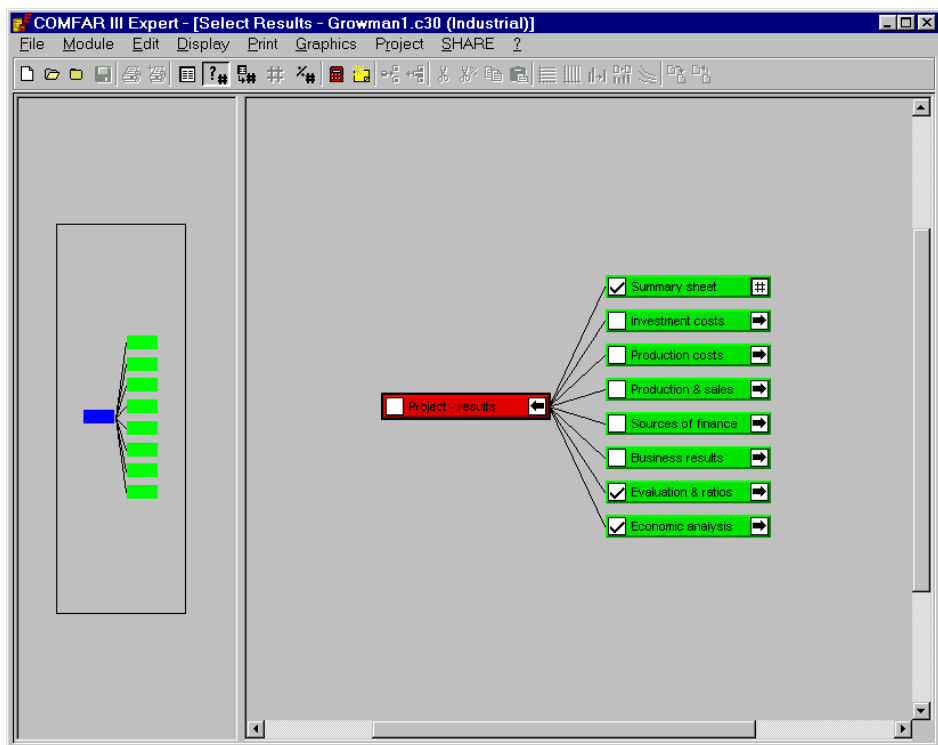


Figure 50: Select results browser with first-level nodes

The select results browser is displayed with the PROJECT - RESULTS node and the first-level nodes for each group of available schedules and graphs.

Schedules and graphs are selected by clicking the Check Icon at the left of each node. When a blank Check Icon is selected a check appears inside the icon. This indicates that the node is selected for calculation. When a node containing the Extend Icon is

selected, all its subnodes are automatically selected. A subnode can subsequently be deselected by clicking its Check Icon containing a check (the check disappears).

Only selected nodes are calculated and are thus available for display or print. However, in case the user does not make any selections, COMFAR *III Expert* automatically selects a minimum of result nodes (see table 33).

Nodes selected automatically cannot be deselected. For these nodes the Check Icon at the left of the node appears with a check which cannot be deleted.

The most manageable procedure is to extend each group of nodes individually one stage at a time, selecting only those nodes for which calculations and results are required. This is accomplished by clicking the Extend Icon for a node with the left mouse button (clicking with the right mouse button extends the node fully and in some cases the structure is too large to fit on the screen).

Select the nodes for the above schedules and graphs by clicking the Check Icon at the left of each node (a check appears in the Check Icon when it is selected).

NODE	AUTOMATICALLY SELECTED	TO BE SELECTED BY USER	TYPE
SUMMARY	Always present	-	Table
INVESTMENT			
Fixed investment	Total	Foreign, local	Table
Pre-production expenditure	Total	Foreign, local	Table
Working capital	Total	Foreign, local	Table
Total investment	Total	Foreign, local	Table
[all charts]	Structure	-	Chart
PRODUCTION COSTS			
Total costs	Total	Foreign, local Variable, fixed	Table
Direct, indirect costs	-	All tables	Table
Cost allocation	-	Shirts	Table
		Blouses	Table
		Dresses	Table
[all charts]	Structure	-	Chart
PRODUCTION AND SALES			
Total sales	Total	Foreign, local	Table
Shirts	Total	Foreign, local	Table
Blouses	Total	Foreign, local	Table
Dresses	Total	Foreign, local	Table
[all charts]	Structure	-	Chart
SOURCES OF FINANCE			
Financial flow	Total	Foreign, local	Table
	Foreign/local flow	-	Chart
	Equity/loan flow	-	Chart
Total debt service	Total	Foreign, local	Table
Debt service	-	Foreign, local	Table
[all charts]	-	Foreign, local	Chart
	-	Long-/short-term	Chart

BUSINESS RESULTS			
Cash flow for financial planning	Total	Foreign	Table
[other charts]	Periodical cash flow		Chart
	Accum.CF, net flow,		Chart
	sales & production costs		
Discounted cash flow	Total capital invested		Table
	Total equity invested		Table
[NPV charts, IRR]	Total capital, total equity	Growmania,	Chart
		Garment Importers	
[other charts]	Accum.CF, net flow,		Chart
	sales & production costs		
Income statement; ratios	Total		Table
Product profitability	-	Shirts, blouses, dresses	Table
Break-even analysis	-	By product and period	Chart
Balance sheet and ratios	Total	-	Table
[all charts]	Structures (ratios)	-	Chart
EVALUATION AND RATIOS			
Financial ratios	Numerical ratios	-	Table
Efficiency ratios	Numerical ratios	-	Table
[all charts]	Structures (ratios)	-	Chart
ECONOMIC ANALYSIS			
Value-added	Value-added criteria	-	Table
	Value-added structures	-	Chart
Net foreign exchange effect	Numerical values	-	Table
Employment effect	Numerical values	-	Table
Economic appraisal	Numerical values	-	Table
	Net Present Values	-	Chart

Table 33: Nodes automatically selected and nodes to be selected for results calculation

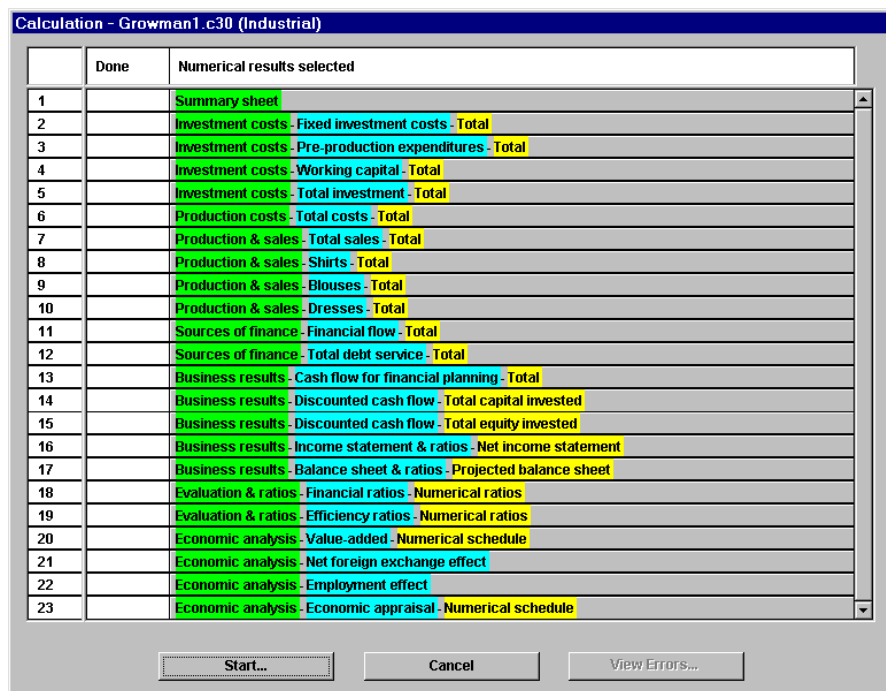


Figure 51: Calculation modal window

2. Calculations

The schedules for the selected nodes are calculated with **CALCULATION** in the **MODULE** menu.

1. Choose **Calculation** in the **MODULE** menu. The **CALCULATION** modal window is displayed (see figure 51).

The **CALCULATION** modal window displays the numerical results selected. Graphical results are derived directly from the numerical results and do not require separate calculation.

When calculation is initiated by choosing the **Start** pushbutton in the **CALCULATION** modal window, the completion of calculations for each selected numerical result is indicated by the appearance of a check mark in the **DONE** column.

2. Choose the **Start** pushbutton in the **CALCULATION** modal window. At the completion of calculations control returns to the results browser. The **SHOW RESULTS** configuration of the browser is displayed.
3. Save project data input.

When the selected results are calculated, the data input can be saved for future reference.

1. Choose **Save Project as** in the **FILE** menu. The **SAVE PROJECT AS** modal window is displayed.
2. Enter the project's name, **GROWMAN2.C30**, in the **FILE NAME** entry field (please refer to the note given in chapter II. *Tomato canning*).
3. Save the file by choosing **SAVE** in the **SAVE PROJECT AS** modal window. Control returns to the browser.

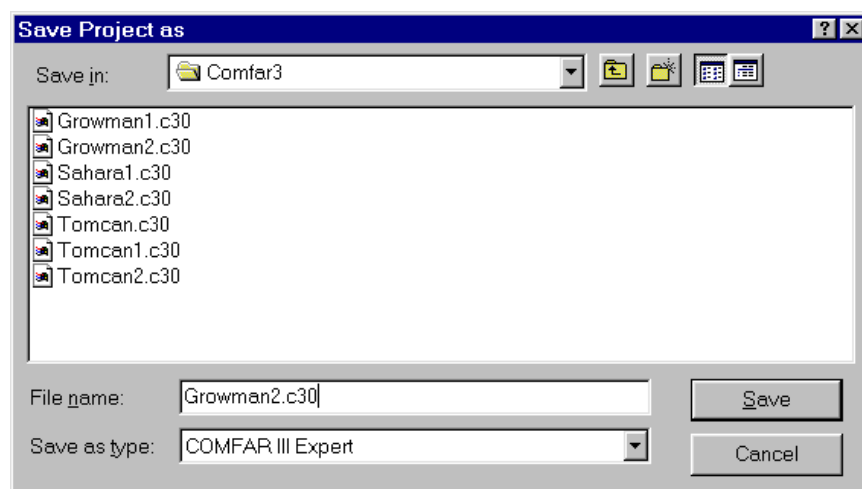


Figure 52: Save Project as modal window

3. Show results

Numerical schedules and graphical results are displayed by choosing the Table Icon (numerical schedules) or the Graphics Icon (graphical results) for a node. The procedures below describe the method of displaying the numerical result BUSINESS RESULTS - DISCOUNTED CASH FLOW - TOTAL CAPITAL INVESTED and the graph BUSINESS RESULTS - BREAK-EVEN ANALYSIS - SHIRTS - SELECTED YEAR. The procedures for displaying all other selected numerical and graphical results are similar.

BUSINESS RESULTS - DISCOUNTED CASH FLOW - TOTAL CAPITAL INVESTED

1. If not already displayed, choose **Show Results** in the MODULE menu (if already chosen a check appears at the left of SHOW RESULTS in the menu). In the show results browser the Check Icon at the left of each node are inactive. Only the Table Icon and the Graphics Icon at the right of each node are active.
2. Choose the Table Icon for the node BUSINESS RESULTS - DISCOUNTED CASH FLOW - TOTAL CAPITAL INVESTED. The numerical result is displayed. Yearly or periodic display of results can be selected with the appropriate radio button at the base of the window. The description of the schedule is contained in the *Reference Manual*, chapter X.
3. Select either the **Yearly** or **Periodic** radio button. The corresponding version of the result is displayed.

BUSINESS RESULTS - BREAK-EVEN ANALYSIS - SHIRTS - SELECTED PERIOD

From the RESULTS window currently displayed it is possible to select for display any of the available schedules or graphs within the main group (a first-level node, e.g., BUSINESS RESULTS) in which it is contained. These schedules and graphs within the main group can be selected from the drop-down list boxes in the upper part of the window, with higher levels of definition increasing in the drop-down list boxes from left to right.

As an example, the following procedure describes the selection of the graph BUSINESS RESULTS - BREAK-EVEN ANALYSIS - SHIRTS - SELECTED PERIOD, which is one of the graphs selected for calculation. The procedure is similar for selecting all other available results (numerical and graphical) for display.

1. Select **Business results** from the left-most drop-down list box. The available results in the BUSINESS RESULTS group are now included in the next drop-down list box at the right.
2. Select **Break-even analysis** from the upper right drop-down list box. The available results in the BREAK-EVEN ANALYSIS group are now included in the next drop-down list box.

3. Select **Shirts** from the drop-down list box. The available results in the SHIRTS group are now included in the next drop-down list box (at the right of the second).
4. Select **Selected period** (with the Graphics Icon at the left) in the fourth drop-down list box. The selected result is now displayed. Alternatively, this graph can be displayed by selecting the corresponding node in the show results browser.

4. Print results

The results selected and calculated with SELECT RESULTS and CALCULATIONS in the MODULE menu can be printed either ON LINE or in batch mode.

To print a selected numerical or graphical result:

1. Select the node to be printed in the show results browser.
2. Choose **Selected item** in the PRINT menu.

A numerical or graphical result can be added to the batch file to be printed subsequently with the PRINT JOB feature of the PRINT menu.

1. Select the node to be added to the batch file.
2. Choose **Add to print job** in the PRINT menu.

The procedure for printing all selected results in batch mode using PRINT JOB in the PRINT menu is described in the *Reference Manual*, chapter V.E.

IV. SAHARA TEXTILE MILLS

This case study is adapted from a set of training materials prepared by UNIDO, Investment and Technology Promotion Division, Feasibility Studies Branch. Only the information necessary for COMFAR analysis is presented.

Several additional analytical features of COMFAR are utilized in this case. Both COST CENTRE ANALYSIS and COST ALLOCATION are included in the financial analysis. Economic analysis include foreign exchange effect, employment effect and economic appraisal schedules.

Assumptions and conditions underlying the analysis are as follows:

- New industrial project
- Feasibility study level
- Constant pricing
- Joint-venture project
- Cost centre analysis
- Cost allocation (allocation of investment costs only)
- Value-added analysis
- Foreign exchange effect
- Employment effect (direct effect)
- Economic appraisal

The standard default settings are assumed for all data input. Additional assumptions are included in the text.

It is recommended that the TOMATO CANNING or the GROWMANIA GARMENTS case be studied before starting with the SAHARA TEXTILE MILLS case, as the descriptions of the graphical user interface and communication with COMFAR *III Expert* are not as detailed in the SAHARA case!

A. START COMFAR

The procedure for starting COMFAR is described in chapter III of the *Reference Manual*. When COMFAR is started, the menu bar is displayed.

B. SELECT PROJECT TYPE AND LEVEL OF ANALYSIS

The Sahara Development Bank has received an application from Sahara Textile Mills Ltd. for a loan equivalent to app. BS 380 million (see chapter IV.C.4, *Currencies*). The company, which has just been established as a private joint stock company with a registered capital of app. BS 242 million, wants to set up a modern spinning and weaving plant to manufacture a variety of cotton/synthetic suiting fabrics.

As part of the first phase (the project), the promoters intend to install a weaving and finishing plant with 270 weaving looms having an annual capacity of 8 million metres of fabric at an estimated capital investment of approximately BS 700 million. The promoters intend to consider adding spinning facilities as a second phase at a later date. The promoters have considered the project at various levels of definition and are now attempting to establish the commercial feasibility and to satisfy the Development Bank that the project is economically sound.

Construction is assumed to start on 1 July 2001.

The official exchange rate is BS 65.00 per US\$.

1. Choose **New Project** in the FILE menu. The NEW PROJECT modal window is displayed.

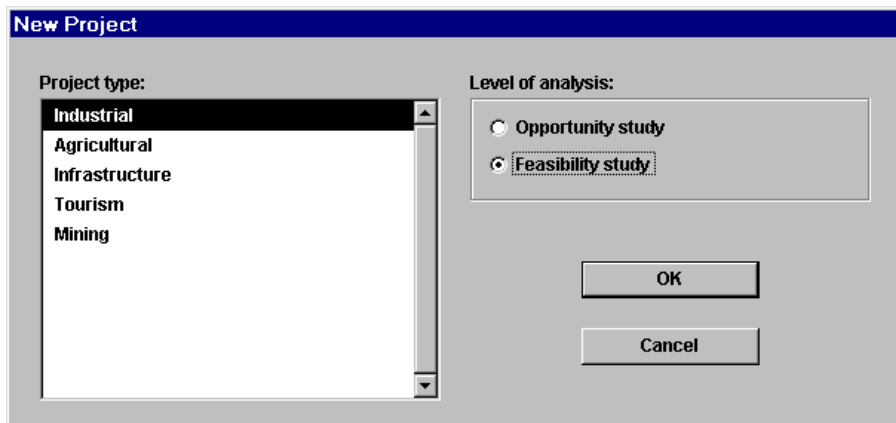


Figure 53: New project modal window

2. Select **Industrial** in the PROJECT TYPE list box.
3. Select the **Feasibility study** radio button.
4. Choose the **OK** pushbutton. The browser and browser overview panel are displayed with the MENU bar. The PROJECT - INPUT DATA node and PROJECT IDENTIFICATION node are displayed in the browser.

C. FINANCIAL DATA ENTRY

1. Project identification

This new industrial project is a joint venture between the family Hussein and the Development Bank. Cost centre analysis and cost allocation are also included to analyse the profitability of each of the six fabrics planned for production. Economic appraisal, foreign exchange effect and employment effects are of interest to the Development Bank for allocating their investment resources.

1. Choose the Table Icon for the PROJECT IDENTIFICATION node. The PROJECT IDENTIFICATION window is displayed.

The screenshot shows a software window titled "COMFAR III Expert - [Project identification - Project1. (Industrial)]". The window has a menu bar with "File", "Module", "Edit", "Display", "Print", "Graphics", "Project", "SHARE", and "?". Below the menu bar is a toolbar with various icons. The main area of the window is divided into several sections:

- Project title:** A text field containing "Sahara Textile Mills".
- Project description:** A large text area containing the text "Remark: Data input for financial analysis only.".
- Date and time:** A text field containing "2 August 1995".
- Project classification:** A section with three radio buttons and one checked checkbox:
 - ☒ New project
 - ☐ Expansion/rehabilitation project
 - ☒ Joint-venture project
- Depth of analysis:** A section with two checked checkboxes and a button:
 - ☒ Financial analysis
 - ☒ Economic analysis
 -

At the bottom of the window are two buttons: "OK" and "Cancel".

Figure 54: Project identification window

2. Select the PROJECT TITLE entry field and enter the name of the project, **Sahara Textile Mills**.
3. Select the PROJECT DESCRIPTION multiple-line entry field and enter descriptive text for the project.
4. Select the Date and time entry field and enter the date and time as text.
5. The **New project** radio button is selected by default.
6. Select the **Joint-venture project** check box.

7. Select the **Economic analysis** check box.
8. Choose the **Special features** pushbutton. The SPECIAL FEATURES modal window is displayed.

Special features

☒ **Cost centre analysis**

☒ **Cost allocation**

☐ **Inflation**

☐ **Revaluation of fixed assets**

Escalate first year: time(s)

Stock model:

Note: According to the UNIDO Manual for the Preparation of Industrial Feasibility Studies (newly revised and expanded edition) it is recommended to apply cost allocation in combination with cost centre analysis.

OK Cancel

Figure 55: Special features modal window

9. Select the **Cost allocation** check box. The **Cost centre analysis** check box is automatically selected (it can be turned off by clicking with the mouse).
10. Accept the selections in the SPECIAL FEATURES modal window with the **OK** pushbutton. Control returns to the PROJECT IDENTIFICATION window.
11. Choose **OK** in the PROJECT IDENTIFICATION window. The PLANNING HORIZON node is displayed in the browser.

2. Planning horizon

The planning horizon includes two years for the construction phase and ten years of production with yearly planning throughout. Financial balances are produced at the end of each fiscal year (30 June).

1. Choose the Table Icon for the PLANNING HORIZON node. The PLANNING HORIZON window is displayed.

The insertion point is located by default in the BEGIN field of CONSTRUCTION PHASE panel. Fields are most easily traversed using [TAB] but can also be selected with the mouse.

Figure 56: Planning horizon window

2. Choose **6** in the MONTH OF BALANCE drop-down list box (June).
3. Enter the beginning date **7/2001** in the BEGIN field of the CONSTRUCTION PHASE panel.
4. Enter **2** (years) in the LENGTH field.
5. Leave the value **0** in the MONTHS field. The END field in the CONSTRUCTION PHASE panel automatically displays the end construction phase date of 6/2003 (the last day of June 2003). The BEGIN field in the PRODUCTION PHASE panel automatically displays the beginning date of

the production phase, 7/2003 (first day). The number of periods in the production phase is to be 10.

- The number **10** (default in COMFAR III Expert) appears in the LENGTH-PERIOD field of the PRODUCTION PHASE panel. This value is accepted as the Sahara project is assessed for a 10 years production phase. The project end date is automatically displayed (6/2013). No start-up period is defined.

A reference date can be chosen as the end date of any production phase period. The reference date is significant for the period in which break-even is calculated and therefore should be a year of full operations. In this case the date 6/2007 is selected.

- Choose **6/2007** in the REFERENCE DATE drop-down list box.
- Choose **OK** in the PLANNING HORIZON window. Control returns to the browser. The PRODUCTS node is displayed.

3. Products

Planned production capacity and prices for the six planned products are shown in table

- Each type of fabric is to be produced over the entire production phase.

PRODUCT	NOMINAL CAPACITY (thousand metres)
A - Chit	1,550
B - Chelvar	1,610
C - Kodari	785
D - Garment	3,430
E - Upholstery	440
F - Men's shirting	220

Table 34: Nominal production capacity

- Choose the Table Icon for the PRODUCTS node. The PRODUCTS window is displayed.
- Use the EDIT panel to sequentially enter the **Name** and **Nominal capacity** as specified above. The default values for the **Start** and for the **End of production** are the begin (**7/2003**) and the end (**6/2013**) of the entire production period defined before and are not changed as it is assumed that all products will be manufactured throughout the entire period.
- Choose **OK** in the PRODUCTS window. Control returns to the browser. The CURRENCIES node is displayed.

COMFAR III Expert - [Products - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Edit:

Number: 6

Name: F - Men's shirting

Actual start of production: 7/2003

Actual end of production: 6/2013

Nominal capacity: 220.00

New

Delete

Edit

Accept Edit

	Name	Start	End	Nominal capacity
1	A - Chit	7/2003	6/2013	1,550.00
2	B - Chekvar	7/2003	6/2013	1,610.00
3	C - Kodari	7/2003	6/2013	785.00
4	D - Garment	7/2003	6/2013	3,430.00
5	E - Upholstery	7/2003	6/2013	440.00
6	F - Men's shirting	7/2003	6/2013	220.00

OK Cancel

Figure 57: Products window

4. Currencies

The local currency is the bolsa (BS). Imports of all machinery and materials are paid in US\$ with an official exchange rate (OER) of BS 65.00 per US\$.

Data values for the project are already expressed in terms of thousand BS (tBS). The foreign transactions are converted to bolsa at the official exchange rate.

It is important for purposes of economic appraisal to maintain the distinction between foreign and local transactions. Therefore, an additional (and artificial) currency needs to be defined, named FB (foreign exchange requirements expressed in BS). Foreign transactions are to be entered in thousand FB (tFB) and local transactions in thousand bolsa (tBS). In the economic appraisal the shadow rate of foreign exchange is applied to FB only.

1. Choose the Table Icon for the CURRENCIES node. The CURRENCIES window is displayed. **Local** appears as the type of currency in the EDIT panel.
2. Use the **Edit** feature of the EDIT panel to enter the **Name** (thousand bolsa) and **Abbreviation** (tBS) of the local currency. In this case the EXCHANGE RATE fields are inactive. TYPE is a display field only (local or foreign).

COMFAR III Expert - [Currencies - Project]. (Industrial)

File Module Edit Display Print Graphics Project SHARE ?

Edit:

Type: Foreign

Name: Forex required in tBS

Abbreviation: tFB

Exchange rate: 1.0000 tFB = 1.0000 tBS

New

Delete

Edit

Accept Edit

Accounting currency:

Name: thousand bolsa

Units: Absolute

Select

Reference...

	Name	Abbr.	Exchange rate
Local	thousand bolsa	tBS	
Foreign	Forex required in tBS	tFB	1.0000 tFB = 1.0000 tBS

OK Cancel

Figure 58: Currencies window

3. Use the **New** feature of the EDIT panel to enter the **Name** (Forex required in tBS), **Abbreviation** (tFB) and **Exchange rate** (1.00 tFB = 1.00 tBS) for the foreign exchange requirements (imports).
4. Select the **thousand bolsa** line in the list box.
5. Choose the **Select** pushbutton to assign tBS as the accounting currency. All data values are entered so that the result is expressed in thousand BS. For this reason the units of the accounting currency are **Absolute**.
6. In the UNITS drop-down list box, **Absolute** is the default value which is accepted as the accounting unit. The reference currency (US\$) and the corresponding exchange rate (BS to US\$) are defined as text only. Their purpose is to provide an easy reference for conversion of units expressed in the accounting (or any other) currency. This information appears only in the SUMMARY schedule.
7. Choose the **Reference** pushbutton. The REFERENCE CURRENCY modal window is displayed.
8. Sequentially select the NAME and EXCHANGE RATE fields and enter **US dollars** and **BS 65.00 per US\$**.

9. Accept the entries in the REFERENCE CURRENCY modal window with the **OK** pushbutton. Control returns to the CURRENCIES window. Accept the selections in the CURRENCIES window with the **OK** pushbutton. Control returns to the browser. The COST-CENTRE structure and the JOINT-VENTURE PARTNER nodes are displayed.

5. Cost centre structure

Cost centre analysis is activated in the PROJECT IDENTIFICATION window. The standard cost-centre structure is utilized without modification (additional cost centre nodes can be added using the **Insert** feature of the EDIT menu).

1. Choose the Extend Icon for the COST CENTRE STRUCTURE node. The standard cost centre structure is displayed in the browser.
2. Choose the Table Icon for the first COST CENTRE node (production). The COST CENTRE DEFINITION window is displayed.

Each product is associated with all cost centres. The procedure is applicable to the six standard cost centres.

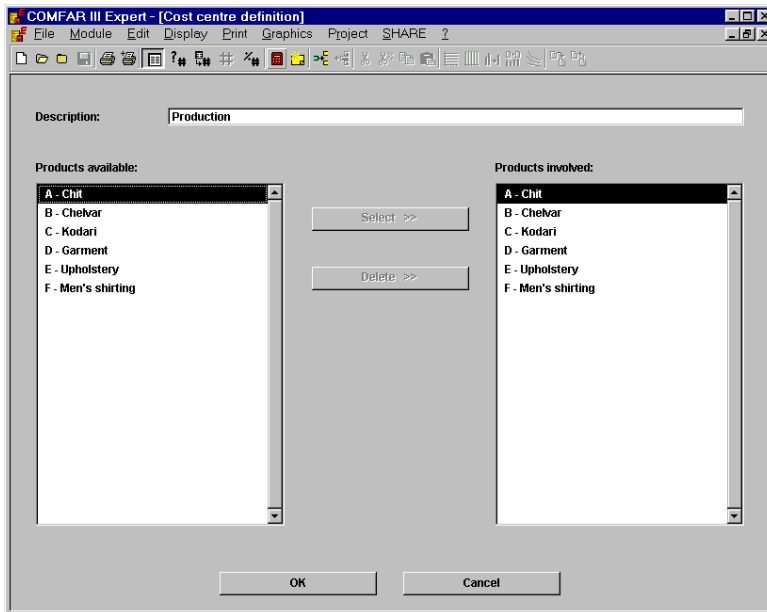


Figure 59: Cost centre definition window

3. All six products in the PRODUCTS AVAILABLE list box also appear automatically in the PRODUCTS INVOLVED list box for all standard cost centres. (As all products are assigned to all cost centres, the **Select** and **Delete** pushbuttons are not used in this case.)
4. Accept the selections with the **OK** pushbutton. Control returns to the browser.

Products are assigned to each cost centre according to the production costs that fall into each cost category. In the cost allocation process, any indirect costs assigned to a cost centre are allocated to the cost-centre's assigned products according to the selected allocation key. In this case the allocation key, direct costs, is the default value. It will, therefore, not be necessary to use the **Cost allocation** feature in the COST CENTRE modal windows for all project cost items.

Investment and project financing items are assigned to cost centres so that the indirect costs of depreciation and financial costs, respectively, are included in the cost structure for the centre.

6. Joint-venture partner

The Development Bank will take a relatively small position in the project, providing a portion (BS 18.0 million) of the foreign exchange requirements as equity. The Bank is guaranteed a 12% return (preferred dividend) on its equity over the life of the project.

- 1. Choose the Table Icon for the JOINT-VENTURE PARTNER node. The JOINT-VENTURE PARTNER window is displayed.
- 2. Choose the **Edit** pushbutton. The default information for the local partner is displayed in the EDIT panel.

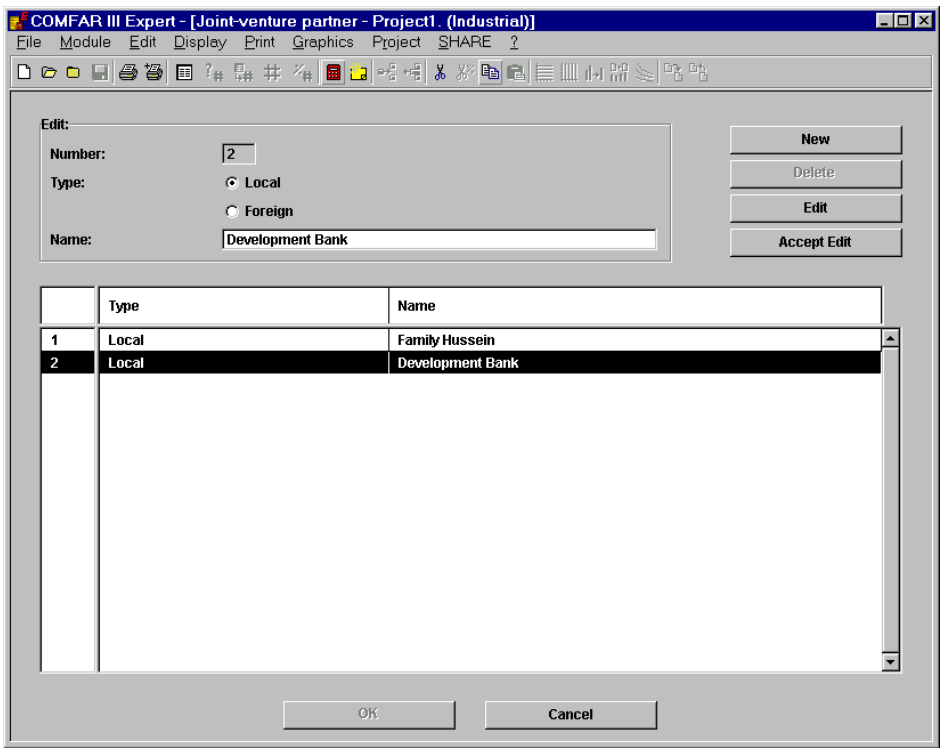


Figure 60: Joint-venture partners window

3. The **Local** radio button is already active.
4. Enter **Family Hussein** in the NAME field.
5. Choose the **Accept Edit** pushbutton. The local designation and name of the first partner are transferred to the list box.
6. Select the second line in the PARTNERS list box.
7. Choose the **Edit** pushbutton.
8. Enter **Development Bank** in the NAME field.
9. Choose the **Accept Edit** pushbutton. The local designation and name of the bank are transferred to the list box.
10. Accept the selections with the **OK** pushbutton. Control is returned to the browser and the DISCOUNTING node is displayed.

7. Discounting

The opportunity cost of capital for total investment, for total equity and for each of the partners is assumed to be 12%. The Short NPV is calculated for six years. The reinvestment rate and the borrowing rate are assumed at 12% and 8%, respectively, for the calculation of the Modified Internal Rate of Return (MIRR).

COMFAR III Expert - [Discounting - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Net present values discounted to:

☐ End of first year (=6/2002) ☒ Beginning of first period (=7/2001)

IRR: 12.0000

Discounting Modified Internal Rate of Return

	Rate (%)	Length (years)
Total investment	12.00	12
Total equity capital	12.00	6
Family Hussein	12.00	6
Development Bank	12.00	6

OK Cancel

Figure 61: Discounting window

1. Choose the Table Icon for the DISCOUNTING node. The DISCOUNTING window is displayed.
2. The **Discounting** tab is active by default and correspondingly the DISCOUNTING list box appears in the DISCOUNTING window.
3. Use the iconic buttons and data field to enter the values of the **Discount rate** (12%) for total investment, total equity capital and for the two partners. The length of the cash flow array to be discounted is 6 years for equity; the value for total investment cannot be changed.
4. Select the **Modified Internal Rate of Return** tab. The MODIFIED INTERNAL RATE OF RETURN list box appears in the window. The reinvestment rate (12%) and borrowing rate (8%) are assumed for all levels of investment.
5. Use the iconic buttons and data field to enter **12%** as the **Reinvestment rate** and **8%** as the **Borrowing rate** for TOTAL INVESTMENT, TOTAL EQUITY and for the two partners.
6. Select the **Beginning of first period** radio button. All discounted values are to be computed at the beginning of the project.
7. Accept the selections with the **OK** pushbutton. The nodes for the remaining standard structure are displayed in the browser.

8. Fixed investment costs

The total cost of the project, including the permanent working capital requirement, is estimated at 616.642 million BS, as shown in table 35.

DESCRIPTION	INVESTMENT COSTS (tBS)		
	YEAR 1	YEAR 2	TOTAL
Land	10,800		10,800
Site development	2,500		2,500
Civil works	59,300	7,100	66,400
Machinery and equipment	16,500	312,500	329,000
Installation		32,900	32,900
Utilities	23,600	4,300	27,900
Vehicles and furniture	3,100	3,200	6,300
Contingencies	4,200	14,000	18,200
Total fixed investment costs	120,000	374,000	494,000
Pre-production expenditures ^a		5,700	5,700
Interest during construction ^b	6,081.90	35,796.96	41,878.86
Permanent working capital (see below)		75,063.93	75,063.93
Total	126,081.90	490,560.89	616,642.79

Table 35: Estimated project cost

DATA STRUCTURE MODIFICATIONS

Before starting to enter the fixed investment costs and depreciation conditions, the structure of the data input browser has to be extended to accommodate subnodes not contained in the default structure. Separate nodes are required for foreign and local components when items are obtained from a combination of sources. The necessary changes are shown in table 36.

NODE	SUBNODES CREATED
Plant machinery and equipment	Imported machinery and equipment Installation (local) Utilities, foreign Utilities, local
Auxiliary and service plant equipment	Vehicles and furniture, foreign Vehicles and furniture, local

Table 36: Data structure modifications

^a Entered as pre-investment studies in the browser.

^b Interest during construction is to be capitalized. The values are calculated as fixed investment costs but will be entered in the loan window.

The procedure below is described for defining the subnodes of the PLANT MACHINERY AND EQUIPMENT node. A similar procedure is applicable for the AUXILIARY AND SERVICE PLANT EQUIPMENT node.

1. Select the PLANT MACHINERY AND EQUIPMENT node in the browser by clicking into the description area of the node.
2. Choose **Insert** in the EDIT menu. The INSERT NEW ITEMS modal window is displayed.

Insert New Items

Insert below:

☐ According to level of feasibility study
 ☒ **User-defined**
 Number of items:

	Description	Share (%)
21	Imported machinery and equipment	---
22	Installation (local)	---
23	Utilities, foreign	---
24	Utilities, local	---

Figure 62: Insert new items modal window

3. Select the **User-defined** radio button.
4. Enter **4** in the NUMBER OF ITEMS field; press **[ENTER]** on the keyboard. The **Insert** pushbutton becomes active.
5. Select the **Insert** pushbutton; default descriptions of four subnodes appear in the DESCRIPTION list box. Use the iconic buttons and DATA ENTRY field to change the default descriptions and enter the following descriptions of the nodes to be created: **Imported plant machinery and equipment; Installation (local); Utilities, foreign; Utilities, local**.
6. Accept the definitions with the **OK** pushbutton. Control is returned to the browser. The PLANT MACHINERY AND EQUIPMENT node is displayed with its four defined subnodes and with the Compress Icon rather than the Table Icon. The structure for this node can be compressed or extended with the Compress Icon and the Extend Icon, respectively.
7. A similar procedure is used to create two subnodes for the Auxiliary and service plant equipment node (see table 36).

ENTRY OF INVESTMENT COSTS (FOREIGN/LOCAL) AND DEPRECIATION TYPE

To enter the data for each investment cost item shown in table 37, select the corresponding node of the data input browser and proceed as described below for the entry of foreign vehicles and furniture.

Depreciation of all assets is the LINEAR TO SCRAP type.

Initial permanent working capital is entered as initial stocks in the ANNUAL ADJUSTMENTS panel of the PRODUCTION COSTS window (data are taken from table 50).

COST ITEM	CURRENCY	ORIGIN	YEAR	TOTAL VALUE (tBS)	DEPR. (%)	SCRAP (%)
Land	tBS	local	1	10,800	0	100
Site prep. and development	tBS	local	1	2,500	5	10
Civil works, structures ...	tBS	local	1	59,300	5	25
			2	7,100		
Plant machinery and equipment	tFB	foreign	1	16,500	10	10
			2	312,500		
Installation (local)	tBS	local	2	32,900	10	5
Utilities, foreign	tFB	foreign	1	9,100	10	10
			2	1,700		
Utilities, local	tBS	local	1	14,500	10	10
			2	2,600		
Vehicles and furniture, foreign	tFB	foreign	1	2,500	20	5
			2	2,600		
Vehicles and furniture, local	tBS	local	1	600	20	5
			2	600		
Contingencies	tBS	local	1	4,200	10	0
			2	14,000		
Pre-production expenditures, excluding cost of finance (entered as pre-invest. studies)	tBS	local	2	5,700	33.33	0
Initial permanent working capital	tFB	foreign	2	12,044.10	-	-
	tBS	local	2	63,019.83		
Total initial investment costs (net of interest)	tBS	-	-	574,763.93	-	-

Table 37: Estimated fixed investment costs, depreciation rates and scrap values

Vehicles and furniture - foreign

Procedures for the entry of VEHICLES AND FURNITURE - FOREIGN are described. These procedures are similar for all other items of fixed investment. All scrap values are defined in local currency (BS) in the year (PRODUCTION + 1) at book value unless otherwise stated.

Vehicles are replaced in the sixth year of production at a cost of FB 5.0 million (equivalent in US\$). The original vehicles are sold in the sixth year at 40% of the original value. The scrap value of all other assets is assumed to be collected in local currency in the PRODUCTION + 1 period.

- 1. Choose the Table Icon for the VEHICLES AND FURNITURE, FOREIGN node. The VEHICLES AND FURNITURE, FOREIGN window is displayed.
- 2. Use the CURRENCY drop-down list box to select **Forex required in tBS**.
- 3. Select the **Foreign** radio button to designate the origin of the item.
- 4. The depreciation type and starting dates were defined before in the DEFAULTS modal window. Therefore, in the TYPE drop-down list box of the DEPRECIATION CONDITIONS panel, **Linear to scrap** (the default value set before) is displayed, and in the STARTING AT drop-down list box the starting date of depreciation, which is the start of production (**7/2003**), is displayed as the default value.
- 5. Select the RATE field and enter **20**. The LENGTH field automatically displays the corresponding length of the depreciation period, 5 years. Alternatively, enter the number of years and the corresponding rate is automatically displayed.
- 6. Select the SCRAP field and enter **5** for the scrap value (i.e. 5% of the original asset value).
- 7. Use the iconic buttons and list box to enter the investment costs (from table 38) for VEHICLES AND FURNITURE, FOREIGN (all values are entered in tFB).

PERIOD	QUANTITY	PRICE, FOREX REQUIRED IN TBS
7/2001	1	2,500
7/2002	1	2,600
7/2008	1	5,000

Table 38: Data for vehicles and furniture, foreign

The original vehicles are to be sold in the DEPRECIATION + 1 period at tBS 2,040, corresponding to 40% of their original value of tFB 5,100. The procedure is performed separately for the investment in each period, in this case in the periods 7/2001 and 7/2002. The procedure is described for the first of these periods and is similar for the second.

COMFAR III Expert - [Fixed investment costs - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Vehicles and furniture, foreign

Currency: Forex required in tBS Local Foreign

Escalation: 0.00 % p.a.

Depreciation conditions:

Type: Linear to scrap Rate: 20.00 % p.a.

Starting at: 7/2003 Length: 5.00 years

Scrap: 5.00 %

1.0000

	Quantity	Price	Total
7/2001	1.00	2,500.00	2,500.00
7/2002	1.00	2,600.00	2,600.00
7/2003	1.00	0.00	0.00
7/2004	1.00	0.00	0.00
7/2005	1.00	0.00	0.00
7/2006	1.00	0.00	0.00
7/2007	1.00	0.00	0.00
7/2008	1.00	0.00	0.00
7/2009	1.00	0.00	0.00
7/2010	1.00	0.00	0.00
7/2011	1.00	0.00	0.00
7/2012	1.00	0.00	0.00

OK Cancel

Sale of asset...

Figure 63: Vehicles and furniture, foreign window

8. Select any column (**Quantity, Price, Total**) in the line corresponding to the period **7/2001**. The **Sale of asset** pushbutton is activated.
9. Choose the **Sale of asset** pushbutton. The SALE OF ASSET modal window is displayed.
10. In the CURRENCY drop-down list box **thousand bolsa** is displayed (default) as the currency in which the sale will be made.

Sale of asset

Currency: thousand bolsa Local Foreign

Date of sale: Depreciation + 1

☐ Sale at book value

☒ Self-defined price = 1,000.00

OK Cancel

Figure 64: Sale of asset modal window

11. Select the **Local** radio button (unless displayed already).
12. Select **Depreciation + 1** using the DATE OF SALE drop-down list box.
13. Select the **Self-defined price** radio button and enter **1,000** (2,500 x 0.40) in the corresponding field. (In period **7/2002** the value is **1,040.**)
14. Accept the definitions with the **OK** pushbutton in the SALE OF ASSET modal window. Control returns to the VEHICLES AND FURNITURE, FOREIGN window.

STRUCTURAL MODIFICATIONS FOR ENVIRONMENTAL PROTECTION

Before assigning items to cost centres it is best to complete the structural modifications necessary for consistency with the cost centre structure. For this reason, it is best to complete the data entry for all fixed investment costs described above, and particularly for the items requiring adjustments to the data structure (PLANT MACHINERY AND EQUIPMENT, AUXILIARY AND SERVICE PLANT EQUIPMENT and CIVIL WORKS, STRUCTURES AND BUILDINGS).

It is estimated that 20% of investment costs for CIVIL WORKS, STRUCTURES AND BUILDINGS are for environmental protection. In order to show these costs separately under the item (description) ENVIRONMENT PROTECTION they are deducted from the values entered before in item CIVIL WORKS, STRUCTURES AND BUILDINGS cost and assigned to the respective subnodes of the ENVIRONMENT PROTECTION node.

1. Choose the Table Icon of the CIVIL WORKS node to display the window.
2. Select the entire list box by clicking with the mouse cursor in the upper left corner of the box; the entire table is marked.
3. Choose **Split** in the EDIT menu. The SPLIT modal window is displayed.
4. Enter **20** in the SPLIT - % OF line field and select the **OK** pushbutton to confirm splitting of the original values and to close the modal window.
5. Select the **OK** pushbutton again; the data input browser is displayed.
6. Choose the Extend Icon of the ENVIRONMENTAL PROTECTION node, which is a subnode of FIXED INVESTMENT COSTS, to reveal the subnodes (SITE PREPARATION, CIVIL WORKS, PLANT MACHINERY AND EQUIPMENT).
7. Choose the Table Icon of the CIVIL WORKS subnode of the ENVIRONMENTAL PROTECTION node; the FIXED INVESTMENT COSTS window is displayed.
8. Select the entire list box.
9. Choose **Paste** in the EDIT menu. 100% of value is selected by default and is accepted with **OK**. The split data (20% of original values) appear in the selected cells.
10. Select the **OK** pushbutton to accept the data.

COST CENTRES AND COST ALLOCATION

The following procedure describes the continuation of data entry for the node VEHICLES AND FURNITURE, FOREIGN as a model for the entry of data for all fixed investment items. Cost centres (these are the standard cost centres in COMFAR *III Expert*) to which fixed investment items are assigned are shown in table 39.

ITEM	COST CENTRE
Land	Administration
Site preparation and development	Administration
Civil works	Administration (production for the 4th node)
Plant machinery and equipment	Production
Auxiliary and service plant equipment	Administration [vehicles and furniture, foreign] Production [vehicles and furniture, local]
Environmental protection ^a	Production [civil works]
Pre-operational expenses	Administration (25%) [pre-investment studies] Marketing (25%) [preparatory investigations] Production (50%) [detailed engineering] ^b
Contingencies	Production

Table 39: Fixed investment items and cost centres

1. Select the Table Icon of the VEHICLES AND FURNITURE, FOREIGN node to display the corresponding data entry window.
2. Choose the **Cost centre** pushbutton. The COST CENTRE ASSIGNMENT modal window is displayed. The ORIGIN display field indicates the type of cost involved, in this case **Indirect cost item**. **Production** appears in the COST CENTRE drop-down list box.
3. Select **Administration** from the COST CENTRE drop-down list box.

Figure 65: Cost centre assignment modal window

^a Items assigned to ENVIRONMENTAL PROTECTION node of fixed investment costs structure.

^b An item (node) can be assigned only to a single cost centre. This assignment may require creating new nodes and using either the SPLIT and PASTE features of the EDIT menu or the SHARE (%) feature of the INSERT NEW ITEMS window to properly divide the costs prior to cost centre assignment.

Cost allocation - Project1. (Industrial)

Description: Vehicles and furniture, foreign

Name:

New

Delete

Edit

Accept Edit

Allocation key selected: Direct costs

Select

	Allocation key	A - Chit	B - Chelvar
1	Direct costs	---	---
2	Direct factory costs	---	---
3	Direct material costs	---	---
4	Direct labour costs	---	---
5	Sales	---	---
6	Equal share per product	16.67 %	16.67 %

OK

Cancel

Figure 66: Cost allocation modal window

4. Select the **Cost allocation** pushbutton. The COST ALLOCATION modal window is displayed.
5. The ALLOCATION KEY SELECTED (default) is **Direct costs**. (Six standard allocation keys are offered in the ALLOCATION KEY list box. The user may, in addition, define his own allocation keys. For details see the *Reference Manual*, chapter XI.G).
In case **Direct costs** is not selected, mark it in the list box and choose the **Select** pushbutton. The selected allocation key is displayed in the ALLOCATION KEY SELECTED field.
6. Accept the allocation key selection with the **OK** pushbutton in the COST ALLOCATION modal window. Control returns to the COST CENTRE ASSIGNMENT modal window.
7. Accept the selections with the **OK** pushbutton in the COST CENTRE ASSIGNMENT modal window. Control returns to the VEHICLES AND FURNITURE, FOREIGN window.
8. Accept the selections with the **OK** pushbutton in the VEHICLES AND FURNITURE - FOREIGN window. Control returns to the browser.
9. Similarly, the other cost items listed in table 39 and not assigned to the PRODUCTION COST CENTRE (which is the default) need to be assigned to the respective cost centres (**Administration** and **Marketing**).

Cost centre assignment for pre-production expenditures

The pre-production expenditures are divided into the elements in table 40 for assignment to cost centres.

COST CENTRE	SUBNODE	%
Administration	Pre-investment studies	25
Marketing	Preparatory investigations	25
Production	Detailed engineering	50

Table 40: Assignment of pre-operational expenditures to cost centres

This is accomplished using the **Split** and **Paste** features of the EDIT menu.

The procedure is described for the DETAILED ENGINEERING subnode and is similar for the others.

1. Choose the Table Icon for the PRE-INVESTMENT STUDIES node (subnode of PRE-PRODUCTION EXPENDITURES), which contains the total of pre-production expenditures.
2. Select the entire list box.
3. Choose **Split** in the EDIT menu.
4. Enter **75%** (of selected range).
5. Accept the split with **OK** in the modal window (25% of the original values remain in the QUANTITY column).
6. Select the entire list box again.
7. Choose **Copy** in the EDIT menu.
8. Before leaving the window, select the **Cost centre** pushbutton and then **Administration** in the COST CENTRE ASSIGNMENT modal window. Close the modal window with **OK**.
9. Accept the data in the PRE-INVESTMENT STUDIES window with the **OK** pushbutton.
10. Choose the Table Icon for the PREPARATORY INVESTIGATIONS subnode.
11. Select the entire list box.
12. Choose **Paste** in the EDIT menu.
13. Paste **100%** (of value) and choose **OK** in the PASTE modal window.
14. Before leaving the window, select the **Cost centre** pushbutton and then **Marketing** in the COST CENTRE ASSIGNMENT modal window. Close the modal window with **OK**.
15. Accept the data in the PREPARATORY INVESTIGATIONS window with the **OK** pushbutton.
16. Choose the Table Icon for the DETAILED ENGINEERING subnode.
17. Select the entire list box, then choose **Paste** in the EDIT menu.

18. Paste **200%** (of the value on the clipboard, corresponding to 50% of the total pre-production expenditures).
19. Choose **OK** in the PASTE modal window, and then accept the data in the DETAILED ENGINEERING window with the **OK** pushbutton. (The production cost centre is the default.)

Depreciation rates and scrap values are the same for all three items (33.33% and 0%).

- Enter the depreciation rates for **Preparatory investigations** and for **Detailed engineering**. (The conditions for the depreciation of the costs of **Pre-investment studies** were defined before).

9. Production costs

All direct production costs are expressed in terms of cost per 1,000 metres of fabric produced (tables 41 and 42). With the exception of yarns (table 41) unit costs are the same for all six products.

DIRECT COSTS, RAW MATERIALS

All raw materials are considered 100% variable.

Yarn is purchased for each grade of fabric. The price of yarn per metre of fabric produced is shown in table 41. During the first two years of production, yarns for fabric types E and F are imported at a price equal to the domestic price; thereafter these yarns are obtained from domestic sources. An import duty of 12% of the border price is levied on imported yarns.

TYPE OF YARN	DOMESTIC PRICE (tBS/1,000 m ^a of fabric produced)	BORDER PRICE (tFB/1,000 m of fabric produced)
YARN-A	124.5	---
YARN-B	52.0	---
YARN-C	27.3	---
YARN-D	18.0	---
YARN-E	117.8	105.18
YARN-F	79.8	71.25

Table 41: Domestic prices and border prices of different types of yarn used for products A - F

All production costs are entered as STANDARD PRODUCTION COSTS, with the following exceptions, which are entered as ANNUAL ADJUSTMENTS:

^a tFB/1,000 m for types E and F in years 2003 and 2004.

- Initial stocks of yarns for all fabrics
- Costs for types E and F yarns, which are imported for the first two years of production and obtained from local sources for all remaining production years.

Production costs are defined in the windows corresponding to subnodes of the PRODUCTION COSTS node.

The procedures below describe direct production cost entries for product E - Upholstery fabric. Similar procedures are applied for direct cost data of the other five products.

Direct production costs are entered in the subnodes for the particular product. Direct material costs for each product include yarns, chemical and dyes, packaging and contingencies. Subnodes are added to the UPHOLSTERY node for the four types of materials. However, two nodes are required for yarns, YARNS-EF and YARNS-EL as well as for YARNS-FF and YARNS-FL, because for these two products yarns are imported for the first two years of production. The separate nodes are required for the imported materials and for the locally procured materials to account for the foreign exchange flows of the project.

1. Extend the PRODUCTION COSTS node with the left mouse button to display the INDIRECT COSTS node and those for the six products.
2. Extend the E - UPHOLSTERY node to display the nodes for cost items (from RAW MATERIALS to DIRECT MARKETING COSTS).
3. Select the RAW MATERIALS node and use the **Insert** feature of the EDIT menu to insert five subnodes: YARNS-EF, YARNS-EL, CHEMICALS AND DYES-E, PACKAGING-E and CONTINGENCIES.
4. Use the same procedure to create the same five subnodes for the F-MEN'S SHIRTING node.

The procedure below describes the entry for yarn costs for E-UPHOLSTERY. Data for the other material items is entered similarly.

1. Select the Table Icon for the YARNS-EF node. The PRODUCTION COSTS window for YARNS-EF is displayed.
2. Select **Forex required in BS** in the CURRENCY drop-down list box.
3. Select the **Foreign** radio button.

To account for the import of yarns only during the first two years it is necessary to enter the cost data as ANNUAL ADJUSTMENTS rather than STANDARD COSTS which are calculated based on production for all years.

4. Select the **Annual adjustments** panel in the YARNS-EF window.
5. For the periods 7/2003 and 7/2004 (first two production years) use the iconic buttons and data field to enter the data for **Quantity**, **Price** and **Variable %** (**307.67**, **117.8**, **100** and **362**, **117.8**, **100**, respectively). The

quantity figures are taken from the production programme, expressed in thousands of metres (see table 42).

Data for initial stocks of yarns (period 7/2002) are also entered in the ANNUAL ADJUSTMENTS panels. The corresponding data and procedures for these entries are in section IV.C.11, (*Working capital*).

- 6. Choose the **Cost centre** pushbutton. The COST CENTRE ASSIGNMENT modal window is displayed. **Production** is the default value for the COST CENTRE; the default cost allocation key (direct cost) was already defined.
- 7. Accept the selection with the **OK** pushbutton in the COST CENTRE ASSIGNMENT modal window. Control returns to the YARNS-EF window.

COMFAR III Expert - [Production costs - Project1. (Industrial)]

FileModuleEditDisplayPrintGraphicsProjectSHARE?

Description:Yarns-EF

Product:E - Upholstery

Currency:Forex required in tBSLocalCost centre...

Escalation:0.00 % p.a.Foreign

Standard production costs

At nominal capacity of:440.00

Per unit of output

Quantity:0.0000

Variable part:100.00 %

Price:0.0000

Fixed part:0.00 %

Total:0.0000

Fixed costs:

Annual adjustments

0.0000

	Quantity	Price	Total	Var.	Fix.
7/2001	0.00	0.00	0.00		
7/2002	76.92	117.80	9,061.18		
7/2003	307.67	117.80	36,243.53	100.00	0.00
7/2004	362.00	117.80	42,643.60	100.00	0.00
7/2005	0.00	0.00	0.00	100.00	0.00
7/2006	0.00	0.00	0.00	100.00	0.00
7/2007	0.00	0.00	0.00	100.00	0.00
7/2008	0.00	0.00	0.00	100.00	0.00

OKCancel

Figure 67: Direct costs window - yarns EF

In the above entries the quantity is in thousand metres and the price in tFB (forex required in BS); the value is, therefore, calculated in thousand BS, which is the selected accounting unit.

Requirements for YARNS-EL after the period 7/2004 are entered in the node for this item also as ANNUAL ADJUSTMENTS. The procedure is similar to that above. Entries for QUANTITY, PRICE and VARIABLE % are shown in table 42.

PERIOD	QUANTITY ^a (1,000 metres)	PRICE	VARIABLE %
Imported Yarn-E (for upholstery)			
7/2003	307.67	117.8	100
7/2004	362.00	117.8	100
Domestic Yarn-E (for upholstery)			
7/2005	385.25	117.8	100
7/2006	415.50	117.8	100
7/2007	440.08	117.8	100
7/2008	440.17	117.8	100
7/2009-12	440.00	117.8	100

Table 42: Data for quantity, price and variable % for yarns-EL

Requirements for YARNS-FF (7/2003, 7/2004) and YARNS-FL (after period 7/2004) are also entered in the user-defined nodes as ANNUAL ADJUSTMENTS. Entries for QUANTITY, PRICE and VARIABLE % are shown in table 43.

PERIOD	QUANTITY ^a (1,000 metres)	PRICE	VARIABLE %
Imported Yarn-F (for men's shirting)			
7/2003	149.50	79.8	100
7/2004	175.92	79.8	100
Domestic Yarn-F (for men's shirting)			
7/2005	190.33	79.8	100
7/2006	199.83	79.8	100
7/2007	220.67	79.8	100
7/2008	220.08	79.8	100
7/2009-12	220.00	79.8	100

Table 43: Data for quantity, price and variable % for yarns-FF and -FL

All other direct cost items are entered as STANDARD PRODUCTION COSTS. Prices are taken from table 41 (domestic price), quantities correspond to nominal capacities. For example, data for YARNS-A (domestic origin only) are entered by selecting its node and then selecting THOUSAND BS as the currency and the LOCAL radio button.

1. Create for each RAW MATERIALS node of the production costs of products A - Chit, B - Chelvar, C - Kodari and D - Garments the subnodes YARN, CHEMICALS AND DYES, PACKAGING and CONTINGENCIES.
2. Select the **Standard production costs** panel in the PRODUCTION COSTS window for A - CHIT, RAW MATERIALS, YARNS-A.

^a The quantity figures are taken from the COMFAR result table 'Production & sales', 'E - Upholstery', 'Total' (respectively 'F - Men's shirting') after a first calculation run.

- 3. Select the **At nominal capacity** radio button. The corresponding field displays the nominal capacity (1,550).
- 4. Enter the **Quantity (1,550)** and **Price (124.5)** and **Variable part (100)** in the respective fields. (see table 41.)
- 5. Choose the **Cost centre** pushbutton. (The PRODUCTION cost centre is the default and does not need to be changed.)
- 6. Accept the selections with the **OK** pushbutton in the YARNS-A window.

OTHER DIRECT PRODUCTION COSTS

All other direct costs of production are 100% variable. All items except CHEMICALS AND DYES are obtained from local sources.

All other direct-cost items are entered as standard production costs using the costs per 1,000 metres of fabric indicated in table 44.

- 1. Use the right mouse button to extend the A - CHIT subnode of the PRODUCTION COSTS node; the entire production cost tree is displayed for this product.
- 2. Select the Table Icon of the CHEMICALS AND DYES node (subnode of RAW MATERIALS); the PRODUCTION COSTS window for **Chemicals and dyes-A** is displayed.

DIRECT PRODUCTION COSTS	COST PER 1,000 METRES OF FABRIC PRODUCED
Chemicals and dyes	tFB 3.0 (all types)
Packing materials	tBS 1.0 (all types)
Contingencies	2.3% of sales price ^b
Energy	tBS 4.1 (all types)
Repair and maintenance	tBS 1.8 (all types)
Skilled labour	tBS 2.493 (all types)
Unskilled labour	tBS 0.507 (all types) ^a
Direct marketing cost (other direct costs)	2.5% of sales price ^b

Table 44: Other direct costs of production

- 3. Select the **Foreign** radio button.
- 4. Select **Forex required in tBS** from the CURRENCY drop-down list box.
- 5. Select the **Per unit of output** radio button.
- 6. Enter **1** in the QUANTITY entry field and **3** in the PRICE entry field. Remember that the capacity is defined in 1,000 metres of fabric and

^a Unskilled labour - 16.9% of total labour costs.

^b Sales price, in BS: A, 200; B, 110; C, 70; D, 40; E, 200; F, 200.

production costs are expressed in thousand BS (or thousand FB) per 1,000 metres of fabric produced.

7. Accept the entries with **OK**; control returns to the browser.
8. Enter the other direct production costs shown in table 44 into the corresponding cost tables (nodes), applying the same procedure as described above. (Note that all other items are of local origin.)
9. Repeat the above procedure (steps 1-8) for the other five products, using the same data.

INDIRECT PRODUCTION COSTS

Indirect costs are those which are not attributable directly to any of the six products. These costs are entered in subnodes of INDIRECT COSTS. In this case three indirect cost items are defined as indicated in table 45.

1. Extend the INDIRECT COSTS node of the PRODUCTION COSTS node by choosing the Extend Icon.
2. Extend the FACTORY OVERHEAD COSTS node by choosing the Extend Icon. The FACTORY OVERHEAD COSTS structure is displayed. It is necessary to create additional nodes for environmental protection costs as part of factory and administrative overheads. The procedure is described for factory overheads and is also applicable to administrative overheads. (These are operational costs and are not properly entered in the ENVIRONMENTAL PROTECTION node of the INVESTMENT COST structure.)
3. Choose **Insert** in the EDIT menu. The INSERT NEW ITEMS modal window is displayed.
4. Select the NUMBER OF ITEMS field and enter **1**. Then press **[ENTER]**.
5. Use the iconic buttons and entry field to edit the generic name of the created node to ENV. PROTECTION/FAC.OH.
6. Accept the information in the INSERT NEW ITEMS modal window with the **OK** pushbutton. Control returns to the browser. The new node appears in the indirect FACTORY OVERHEAD COSTS structure.

The procedure below describes the entry of data for FACTORY OVERHEAD COSTS - SALARIES AND WAGES. Entries for all other FACTORY OVERHEAD COSTS and for MARKETING OVERHEAD COSTS and ADMINISTRATIVE OVERHEAD COSTS are similar.

1. Choose the Table Icon for one of the FACTORY OVERHEAD COSTS subnodes (e.g., SALARIES, WAGES).

A window is displayed which is similar to the YARNS-EF window above. The currency (**thousand bolsa**) and origin (**Local**) are selected as described above. The ANNUAL ADJUSTMENTS panel is displayed (STANDARD PRODUCTION COSTS is inactive for indirect items). Factory

overheads are broken down as shown in table 45 (all 100% fixed costs).

- 2. Use the iconic buttons and data field to enter the values for **Quantity** and **Price** (9,600). The default setting for indirect costs is 100% **Fixed**. (Either of the values may be changed; the other is calculated automatically.)

Indirect costs are entered in the TOTAL or in the PRICE columns of the corresponding cost window. It is necessary to enter **1** in the QUANTITY column (click the column on top to mark the entire column and enter **1** in the data entry field).

Please note that the **Input mode** defined in the DEFAULTS modal window is ignored in the PRODUCTION COSTS window: therefore, the default value for **Quantity** is zero.

INDIRECT PRODUCTION COSTS (thousand BS)				
ITEM	FACTORY OH	ADMINISTR. OH	MARKETING OH	CC ^a
Salaries, wages, marketing	-	-	8,200	M
Salaries, wages, manufacturing	9,600	3,660	-	P
Social costs	1,600	610	-	P
Materials and services	3,200	1,220	-	S
Rents, leasing costs	9,600	3,660	-	S
Insurance	4,900	1,830	-	S
Environmental protection	3,200	1,220	-	E
	32,100	12,200	8,200	

Table 45: Indirect production costs (overhead costs)

- 3. Choose the **Cost centre** pushbutton. The COST CENTRE ASSIGNMENT modal window is displayed.
- 4. **Production** is the default value in the COST CENTRE drop-down list box, so it is not necessary to change the cost centre for **Salaries, wages** and **social costs**. However, for the other indirect costs the corresponding centre, as defined in table 45, must be selected.
- 5. Accept the selection with **OK** in the COST CENTRE ASSIGNMENT modal window. Control is returned to the PRODUCTION COSTS window.
- 6. Accept the selections with **OK** in the PRODUCTION COSTS window.

Other indirect costs are entered in a similar manner. Distribution of administrative overhead costs of BS 12.2 million among individual cost items is identical to that for the factory overheads. Marketing overhead costs of BS 8.2 million are for salaries and wages only (this cost is assigned to the MARKETING cost centre).

^a Cost centre assignments: M(arketing), P(roduction), S(ervices), E(nvironmental protection).

10. Sales programme

Planned sales for ten years of operations are shown in table 46. The figures are not identical with annual productions as they do not include amounts anticipated to be held in finished goods inventory at the end of each period. Total sales as a percentage of total installed production capacity are indicated in the last column.

YEAR	QUANTITIES SOLD (1,000 METRES)							
	A	B	C	D	E	F	Total	%
7/2003	999	1,045	514	2,219	284	138	5,197	64.7
7/2004	1,259	1,314	642	2,791	356	173	6,536	81.3
7/2005	1,362	1,411	691	3,012	383	189	7,050	87.7
7/2006	1,453	1,512	736	3,213	413	199	7,525	93.7
7/2007	1,542	1,602	781	3,413	438	219	7,995	99.5
7/2008-2012	1,550	1,610	785	3,430	440	220	8,035	100.0

Table 46: Sales programme

Estimated ex-factory prices are shown in table 47.

TYPE OF FABRIC	PRICE (thousand BS/1,000 metres)
A - Chit (70-90 cm)	200
B - Chelvar	110
C - Kodari	70
D - Garment fabrics	40
E - Upholstery	200
F - Men's shirting	200

Table 47: Estimated ex-factory prices

In table 46 the QUANTITIES are in thousand metres, so entering the prices in tBS/1000 metres (table 47) will produce the sales revenues in thousand BS, which is the selected accounting unit.

Sales programme data are entered in the subnodes of the SALES PROGRAMME node. The procedure below describes entries for A - CHIT fabric. Data for other products are entered similarly.

1. Extend the SALES PROGRAMME node with the Extend Icon.
2. Choose the Table Icon for the A - CHIT node. The corresponding SALES PROGRAMME window is displayed.

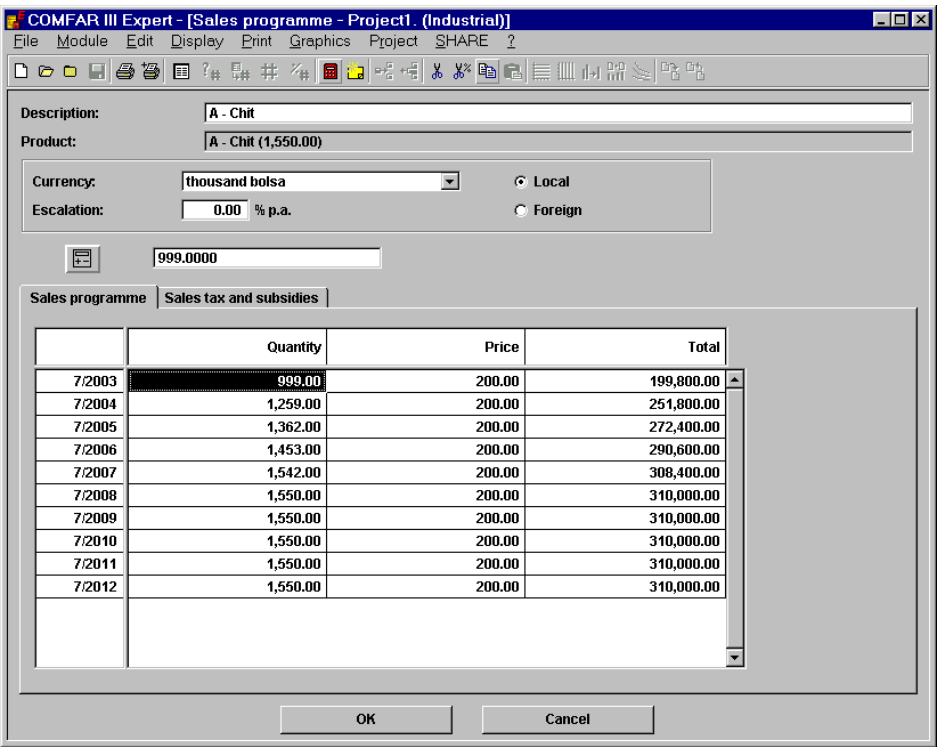


Figure 68: A - Chit window - sales programme

3. **Thousand bolsa** should appear in the CURRENCY drop-down list box, and the **Local** radio button is usually active (if this is not the case, make the corresponding selection).
4. Select the **Sales programme** tab. The SALES PROGRAMME list box is displayed in the A - CHIT window.
5. Use the iconic buttons and data field to enter the **Quantity** (see table 47) and **Price** (200) for each period of production (the price is assumed constant at BS 200 per metre).

There are no sales taxes on output so that the SALES TAX AND SUBSIDIES tab is not used.

11. Working capital

Working capital is estimated on the basis of raw materials and finished goods inventories required. Days coverage for these items and for receivables are shown in table 48.

INVENTORIES	DAYS COVERAGE
Raw materials, contingencies, energy (local and foreign)	90 days
Work in progress	1 day
Finished goods	30 days
Accounts receivable	60 days
Cash-in-hand (local and foreign)	30 days
Accounts payable	1 day

Table 48: Working capital requirements

- 1. Choose the Table Icon for the WORKING CAPITAL node. The WORKING CAPITAL window is displayed.

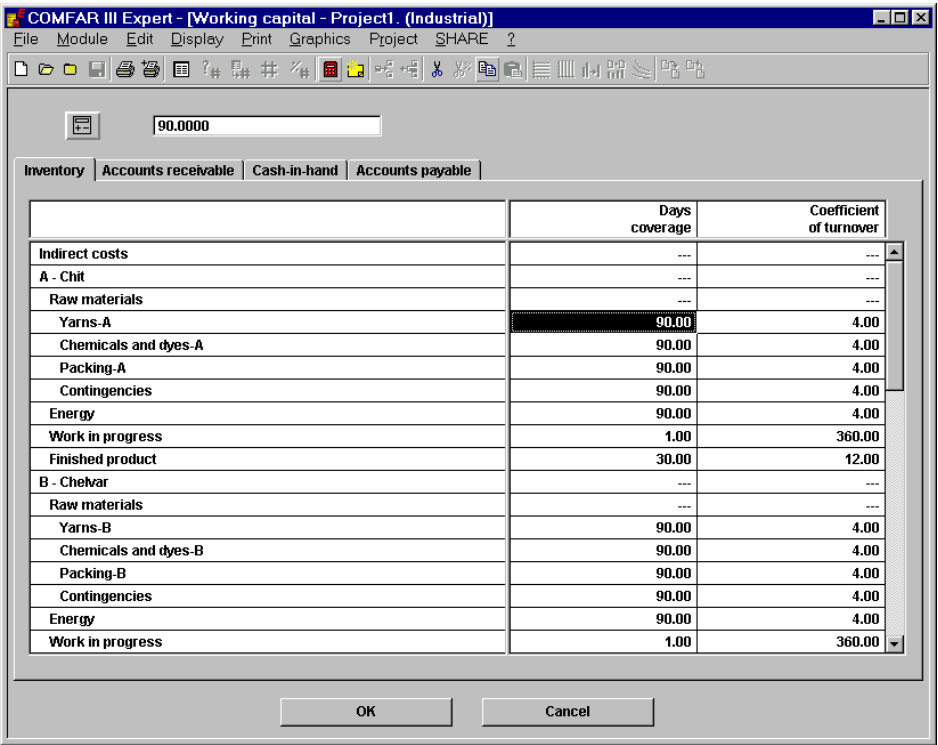


Figure 69: Working capital window with inventory panel

2. Select the **Inventory** tab. The INVENTORY list box is displayed. **Days coverage** (Mdc) or **Coefficient of (annual) turnover** (Coto) is entered for direct raw material items for each product (yarns, chemicals and dyes, packing materials, contingencies), energy, work in progress and for finished goods inventories for each product as indicated above.
3. Use the iconic buttons and data field to enter the days coverage shown above for yarns, chemicals and dyes, packing materials, contingencies, energy, work in progress and for finished goods for each product.
4. Select the **Accounts receivable** tab. Receivables are valued at production costs, which may involve both local and foreign currency items.
5. Use the iconic buttons and data field to enter the **Days coverage** for each product as shown in table 48.
6. Select first the **Cash-in-hand** and afterwards the **Accounts payable** tab to enter the respective **Days coverage** from table 48.
7. Accept the data with the **OK** pushbutton.

INITIAL WORKING CAPITAL (RAW MATERIAL STOCK)

Initial working capital, to be financed as part of the fixed capital structure of the project, is estimated on the basis of raw materials (yarns) to be purchased during the second year of construction. This estimate is based upon the raw materials in the first year of production (year 3). Types E and F represent the foreign currency purchases. Import duties are paid in local currency. The basis for this requirement is shown in table 49.

COSTS (thousand bolsa)			
	FOREIGN	LOCAL	TOTAL
Yarn consumption in year 3	48,176.40	252,079.32	300,255.72
Value of initial stock required in year 2	12,044.10	63,019.83	75,063.93

Table 49: Permanent working capital requirements

It is also assumed that BS 2.0 million of cash-in-hand (local currency) will be raised during year 1. This amount is included in the financial plan (see below).

Data are entered in the ANNUAL ADJUSTMENTS panel of the PRODUCTION COSTS windows for each of the yarns. The breakdown for three months of initial stocks is shown in table 50. The quantities of initial stock are indicated in thousands of metres and the price in tBS/1,000 metres (tFB for E,F).

COMPUTATION OF INITIAL STOCK OF YARNS (RAW MATERIALS)	YARN TYPE					
	A	B	C	D	E	F
Planned sales in year 3	999.00	1045.00	514.00	2219.00	284.00	138.00
Products in stock	83.25	87.08	42.83	184.92	23.67	11.50
Total production in year 3	1082.25	1132.08	556.83	2403.92	307.67	149.50
Initial stock in year 2	270.56	283.02	139.21	600.98	76.92	37.38
Yarn costs	124.50	52.00	27.30	18.00	117.80	79.80
Value of initial stock tBS ^a	33,684.72	14,717.04	3,800.43	10,817.64	9,061.18	2,982.92

Table 50: Breakdown of initial stocks

The procedure for entry of data for initial stocks is described for E - UPHOLSTERY. Similar procedures are applicable for the other yarn types.

1. Select the Table Icon for the YARN-EF node in the PRODUCTION COSTS structure. The YARN-EF window is displayed (see above).
2. Select the **Annual adjustments** panel.

The initial stock data entered in the ANNUAL ADJUSTMENTS panel now is the first chronological appearance of the item and is used in the ADJUSTMENTS window of the cost-benefit analysis.

For this reason it is important to maintain the price information. The value of quantity is, therefore, calculated by COMFAR.

3. Enter in period 7/2002 **117.8** for the **Price** and **9,061.18** for the **Total**; the quantity is computed automatically (provided the original value is zero).
4. Accept the data with the **OK** pushbutton. Control returns to the browser.
5. Use the same procedure to enter the values for yarn prices and total values for the other products (Yarns-FF, Yarns-AL, Yarns-BL etc.).
6. Accept the entries with **OK**; control returns to the browser.

^a For the financial analysis the local currency components (import duty) have not been deducted from the values entered into the corresponding PRODUCTION COSTS window (Annual adjustments, Yarns-EF and Yarns-FF). Therefore, the foreign exchange requirements shown in the result tables/charts are slightly higher than required. For the purpose of economic analysis, taxes and duties can be defined in the ECONOMIC ANALYSIS structure of the browser. To produce the correct foreign exchange flow for financial analysis, an additional YARN IMPORT DUTY node would have to be created.

12. Sources of finance

The proposed capital structure for each year of the project, in thousand BS, is shown in table 51. Equity capital constitutes about 35% of the total long-term finance required; the Development Bank has a small share (FB 18,000 or 7.455% of total equity) for which 12% preferred dividends are paid. Long-term loans are available from the Development Bank, the supplier and from the local industrial bank.

		TOTAL	CONSTRUCTION		PRODUCTION			
			1	2	3	4	5	6
EQUITY CAPITAL								
Family Hussein	foreign	59,450	28,850	30,600				
	local	164,000	34,000	130,000				
Development Bank	foreign	18,000	-	18,000				
TOTAL SHARE CAPITAL		241,450	62,850	178,600				
LOANS								
Development Bank	foreign	280,000	-	280,000				
	local	58,000	58,000	-				
Industrial bank	local	27,000	-	-	15,500	11,500	-	-15,000
Supplier credit	local	41,000	-	-	41,000			
TOTAL LOANS		406,000	58,000	280,000	56,500	11,500	-	-15,000
TOTAL FINANCE		647,450	120,850	458,600	56,500	11,500		
SHORT-TERM LOAN	local	<15,000	-	-	5,200	2,800	3,000	-5,000

Table 51: Proposed capital structure

Development Bank loan

Interest on the Development Bank loans (foreign and local) is 9% per annum plus an annual service fee of 1%. The service fee effectively raises the interest rate to 10% per annum. A commitment fee of 0.75% annually is paid on the undisbursed amount. The fees paid are local or foreign depending on the currency of the loan. The repayment of the Development Bank loan is in 24 equal quarterly installments, commencing for the foreign exchange loan in the second year of operation (30/9/2004) through the seventh year of operation, and for the bolsa loan one year later (30/9/2005). The interest during the construction phase is to be capitalized. Both, interest and fees which accrue during the construction phase, are to be depreciated during the first three years of production (depreciation type = linear to zero).

Industrial bank

The local industrial bank provides a medium-term loan of BS 27.0 million to be used principally for financing the permanent working capital requirement. The interest rate on this loan is 12% and the loan (of the profile type) has the following payment/repayment profile: 15,500 (year 3), 11,500 (year 4), -15,000 (year 6) and - 11,000 (year 7). A commitment fee of 0.5% and an agency fee of 0.25% is to be paid.

LOANS	TOTAL (tBS)	TYPE	REPAYMENT	FIRST REPAYMENT	NUMBER OF REPAYMENTS
Dev. Bank, foreign	280,000	principal	quarterly	30/9/2004	24
Dev. Bank, local	58,000	principal	quarterly	30/9/2005	24
Industrial bank	27,000	profile	yearly	30/9/2006	2 (year 6 and 7)
Supplier credit	41,000	principal	half-yearly	30/9/2004	12
Short-term loan	<15,000	profile	end of year	31/7/2006	3 (year 6,7,12)

Table 52: Loan conditions, repayment of loans

Supplier credit

The supplier credit also forms part of the working capital: BS 41.0 million is made available in year 3. This facility is to be repaid in 12 half-yearly installments commencing in the second year of production. Interest is to be paid yearly on 30/9/2004 at 10% of the unpaid balance.

LOANS	INTEREST p.a. (%)	SERVICE FEE p.a. (%)	COMMITMENT FEE p.a. (%)	AGENCY FEE p.a. (%)
Development Bank	9.0	1.0	0.75	-
Industrial bank	12.0	-	0.5	0.25
Supplier credit	10.0	-	-	-
Short-term loan	15.0	-	-	-

Table 53: Interest and fees payable on loans

Short-term loan

The local industrial bank has also agreed to provide revolving credit (short-term loan) for working capital of up to BS 15.0 million at a rate of 15% on the debt balance to be made available during the first production years (see table 51). This loan has the following disbursement and re-payment profile: disbursements by the bank amount to **tBS 5,200** on 1/7/2003, **tBS 2,800** on 1/7/2004 and **tBS 3,000** on 1/7/2005; repayments by the project (enter negative figures) amount to **tBS 5,000** on 31/7/2006 and **tBS 1,000** on 31/7/2007. The open balance of **tBS 5,000** is assumed to be settled at the end of the planning horizon (31/7/2012).

STRUCTURAL MODIFICATIONS FOR CAPITAL SOURCES

The principal partner, the Family Hussein, contributes both foreign and local equity. Separate nodes are required for each currency.

1. Select the **FAMILY HUSSEIN** node in the **SOURCES OF FINANCE - EQUITY/RISK CAPITAL** structure of the browser.
2. Use the **Insert** feature in the **EDIT** menu to add the nodes **FAMILY, FOREIGN** and **FAMILY, LOCAL**.

The Development Bank provides foreign and local loans in addition to equity capital. Separate nodes are required for each type of loan.

1. Select the **DEVELOPMENT FINANCE INSTITUTION** node in the **SOURCES OF FINANCE - LONG-TERM LOANS** structure of the browser.
2. Use the **Insert** feature in the **EDIT** menu to add the nodes **DEV. BANK, FOREIGN** and **DEV. BANK, LOCAL**.

The term **INDUSTRIAL BANK** is preferred to the generic term **COMMERCIAL BANKS**.

1. Select the **COMMERCIAL BANKS** node of the **LONG-TERM LOANS** node.
2. Use the **Insert** feature in the **EDIT** menu to add a node for **INDUSTRIAL BANK**.

EQUITY/RISK CAPITAL

The following procedure describes the data entry for the Family Hussein local currency equity contribution. Similar procedures are applicable to the Family Hussein foreign exchange equity and the equity of the Development Bank.

1. Extend the **EQUITY/RISK CAPITAL** node by choosing the **Extend** Icon.
2. Extend the **FAMILY HUSSEIN** node by choosing the **Extend** Icon.
3. Choose the **Table** Icon for the **FAMILY, LOCAL** node. The corresponding **EQUITY SHARES** window is displayed.
4. Select **thousand bolsa** in the **CURRENCY** drop-down list box.
5. Select the **Local** radio button.

6. Use the iconic buttons and data field to enter **Paid in** contributions for periods **7/2001 (tBS 34,000)** and **7/2002 (tBS 130,000)**. Only ordinary dividends are to be paid; no entry is necessary for PREFERRED DIVIDENDS.
7. Accept the data with the **OK** pushbutton.
8. Use the same procedure to enter foreign equity paid by the family (**tFB 28,850** and **tFB 30,600**) and by the Development Bank (**tFB 18,000**), selecting **Forex required in tBS** and the **Foreign** radio button.
9. As the Development Bank will be paid a preferred dividend of **12%**, enter this value in the PREFERRED DIVIDENDS - % column of the corresponding EQUITY SHARES window, using the iconic buttons and entry field.

COMFAR III Expert - [Equity shares - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Family local

Currency: thousand bolsa

Profit repatr.: 0.00 % p.a.

Local Foreign

34,000.0000

	Amount paid-in	Amount paid-out	Preferred dividends - abs.	Preferred dividends - %
7/2001	34,000.00	0.00	---	---
7/2002	130,000.00	0.00	---	---
7/2003	0.00	0.00	0.00	0.00
7/2004	0.00	0.00	0.00	0.00
7/2005	0.00	0.00	0.00	0.00
7/2006	0.00	0.00	0.00	0.00
7/2007	0.00	0.00	0.00	0.00
7/2008	0.00	0.00	0.00	0.00
7/2009	0.00	0.00	0.00	0.00
7/2010	0.00	0.00	0.00	0.00
7/2011	0.00	0.00	0.00	0.00
7/2012	0.00	0.00	0.00	0.00

OK Cancel

Figure 70: Family Hussein local equity window

LONG-TERM LOANS

The procedure below describes data entry for the foreign Development Bank loan. Similar procedures are applicable for the local Development Bank loan, the industrial bank loan and supplier credit. Interest accrued during construction and commitment fees are depreciated over three years.

Interest and fees on the Development Bank loan in local currency are assigned to the ADMINISTRATION cost centre. All other long-term loans are assigned to the PRODUCTION cost centre.

- 1. Extend the DEVELOPMENT FINANCE INSTITUTION node in the LONG-TERM LOANS structure with the Extend Icon. The FOREIGN and LOCAL nodes for Development Bank loans are displayed.
- 2. Choose the Table Icon for the DEVELOPMENT BANK, FOREIGN node. The corresponding LOANS window is displayed.
- 3. Select **Forex required in tBS** in the CURRENCY drop-down list box.

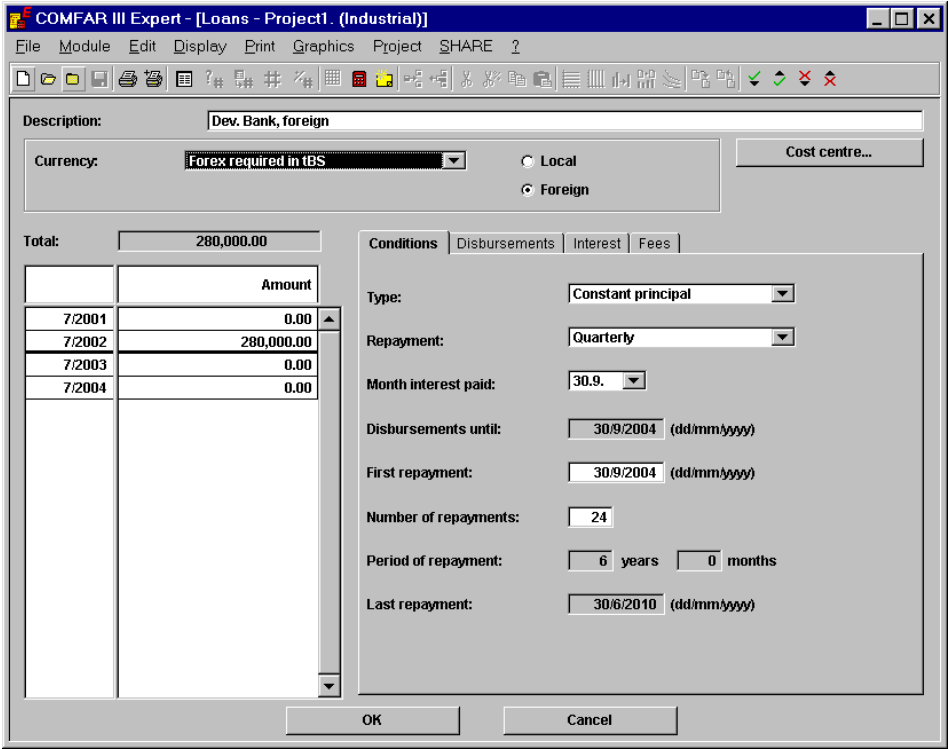


Figure 71: Development Bank foreign loan window with conditions panel

- 4. Select the **Foreign** radio button.
- 5. Select the **Conditions** tab (the CONDITIONS panel is displayed in the LOANS window).

6. Select **Constant principal** in the TYPE drop-down list box.
7. Select **Quarterly** in the REPAYMENT drop-down list box. The MONTH INTEREST PAID field is inactive for a constant principal loan. The interest is paid with the principal according to definitions of FIRST REPAYMENT and REPAYMENT period (in this case the field displays 30/9).
8. Enter **30/9/2004** (end of first quarter of third production year) in the FIRST REPAYMENT field.
9. Enter **24** in the NUMBER OF REPAYMENTS field. The LENGTH OF REPAYMENT fields display **6** years and **0** months. The LAST REPAYMENT field displays **30/6/2010**.
10. Select the **Disbursements** tab (the DISBURSEMENTS panel is displayed in the LOANS window).
11. Select the **New** pushbutton in the EDIT panel to enter the **Date (1/7/2002)** and **Amount (280,000)**. Select the **Accept Edit** pushbutton to transfer the entries to the DISBURSEMENTS list box.
12. Select the **Interest** tab (the INTEREST panel is displayed in the LOANS window).
13. Use the EDIT panel to enter the **Date (1/7/2002)** and the **Rate (10.0)** in the INTEREST RATE list box.
14. Select the **Capitalize interest until** check box. In the drop-down list box **6/2003** (end of construction phase) should be selected already by default.
15. Select the **Depreciation** pushbutton and select **Linear to scrap** in the TYPE drop-down list box. Enter **3** in the LENGTHS entry field of the DEPRECIATION modal window. Accept the entry with **OK**.
16. Select the **Fees** tab (the FEES panel is displayed in the LOANS window).
17. Enter **0.75 %** in the COMMITMENT field.
18. Select the **Foreign** radio button in the FEES PAID panel.
19. Select the **Depreciation** pushbutton and select **Linear to scrap** in the TYPE drop-down list box. Enter **3** in the LENGTHS entry field of the DEPRECIATION modal window. Accept the entry with **OK**.
20. Accept the entries with the **OK** pushbutton in the LOANS window.
21. Use the same procedure to enter data for the local currency loan obtained from the Development Bank. Assign interests and fees for this loan to the administration cost centre, as described below.
22. Choose the **Cost centre** pushbutton. The COST CENTRE ASSIGNMENT modal window is displayed.
23. Select **Administration** in the COST CENTRE drop-down list box.
24. Accept the selection with **OK** in the COST CENTRE ASSIGNMENT modal window. Control returns to the LOANS window.
25. Accept the data with the **OK** pushbutton in the LOANS window.

SHORT-TERM LOAN

This is a revolving credit of BS 15.0 million which is available from the commencement of production through the end of the planning horizon. (In case of an earlier repayment of the loan the corresponding repayment profile would have to be entered as negative amounts.)

1. Choose the Table Icon for the SHORT-TERM FINANCE node. The LOANS window for short-term finance is displayed.
2. Select **thousand bolsa** in the CURRENCY drop-down list box.
3. Select the **Local** radio button.
4. Select the **Disbursements** tab (the DISBURSEMENTS panel is displayed in the LOANS window).
5. Use the EDIT panel to enter the dates of the disbursements and the amounts disbursed: **1/7/2003** (Date) and **5,200** (Amount), **1/7/2004** and **2,800**, as well as **1/7/2005** and **3,000** in the DISBURSEMENTS list box.
Enter the repayments as negative figures (**31/7/2006**, **tBS -5,000**, **31/7/2007**, **tBS -1,000** and **31/7/2012**, **tBS -5,000**).
6. Select the **Interest** tab (the INTEREST panel is displayed in the LOANS window).
7. Use the EDIT panel to enter the **Date (1/7/2003)** and the **Rate (15.0)** in the INTEREST RATE list box.
8. Accept the data with the **OK** pushbutton in the LOANS window.

PROFIT DISTRIBUTION - DIVIDENDS

Dividends are to be paid in local currency from 40% of after-tax profits. The Development Bank obtains 12% guaranteed dividends; the balance is paid to Family Hussein.

1. Choose the Table Icon for the PROFIT DISTRIBUTION node. The PROFIT DISTRIBUTION window is displayed (see figure 72).
2. Select the RETAINED PROFIT field for all production years and enter **60%**; the percentage of profit distributed is displayed automatically.
3. Use the iconic buttons and data field to enter the **Share (100%)** paid to Family Hussein after payment of preferred dividends to the Development Bank in all production years.
4. Accept the data with the **OK** pushbutton in the PROFIT DISTRIBUTION window.

COMFAR III Expert - [Profit distribution - Project]. (Industrial)

File Module Edit Display Print Graphics Project SHARE ?

Description: Profit distribution

60.0000

	Repat. of profit	7/2003	7/2004	7/2005	7/2006	7/2007
Retained profit (in %)	---	60.00	60.00	60.00	60.00	60.00
Profit distributed (in %)	---	40.00	40.00	40.00	40.00	40.00
- Preferred dividends						
= Remaining profit distributed						
Family Hussein	0.00	100.00	100.00	100.00	100.00	100.00
Development Bank	0.00	0.00	0.00	0.00	0.00	0.00
Equity shares	0.00	0.00	0.00	0.00	0.00	0.00

OK Cancel

Figure 72: Profit distribution window

13. Taxes, allowances

Taxes are levied on net income up to BS 2 million at 15% and at 25% for amounts exceeding BS 2 million. A tax holiday of four years is granted to the project. Two years of loss carry-forward are permitted.

As an additional incentive for the project, an investment allowance of 2 % of the total investment of BS 575.6 million, or BS 11.5 million, is granted by the government for the first five years of operations.

1. Extend the TAX, ALLOWANCES node with the Extend Icon. The TAX, ALLOWANCES subnodes are displayed in the browser.
2. Choose the Table Icon for the INCOME (CORPORATE) TAX node. The INCOME (CORPORATE) TAX window is displayed.
3. Choose the **Tax brackets** pushbutton. The TAX BRACKETS modal window is displayed.
4. Use the EDIT pushbutton and the entry field to enter tBS 2,000 as the **Lower limit** of the second tax bracket (the first tax bracket has a lower limit of 0 by default).
5. Accept the data with the **OK** pushbutton in the TAX BRACKETS modal window. Control returns to the INCOME (CORPORATE) TAX window.

Tax brackets

Number: 2

Lower limit: 2,000.00

New

Delete

Edit

Accept Edit

	Lower limit
1	0.00
2	2,000.00

OK

Cancel

Figure 73: Tax brackets modal window

COMFAR III Expert - [Income (corporate) tax - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Income (corporate) tax

Currency: thousand bolsa

Local

Foreign

Tax brackets...

Tax conditions...

15.0000

	Adjustments (absolute)	> 0.00 (in %)	> 2,000.00 (in %)
7/2003	0.00	15.00	25.00
7/2004	0.00	15.00	25.00
7/2005	0.00	15.00	25.00
7/2006	0.00	15.00	25.00
7/2007	0.00	15.00	25.00
7/2008	0.00	15.00	25.00
7/2009	0.00	15.00	25.00
7/2010	0.00	15.00	25.00
7/2011	0.00	15.00	25.00
7/2012	0.00	15.00	25.00

OK

Cancel

Figure 74: Income (corporate) tax window

6. Use the iconic buttons and data field to enter the tax rates for each of the two tax brackets for each production period (**15** and **25**, respectively).
7. Choose the **Tax conditions** pushbutton. The TAX CONDITIONS modal window is displayed.
8. Enter **4** in the TAX HOLIDAYS entry field; **6/2007** appears in the TAX HOLIDAYS drop-down list box.
9. Select the LOSSES CARRIED FORWARD field and enter **2**.

Figure 75: Tax conditions modal window

10. Accept the data with the **OK** pushbutton in the TAX CONDITIONS modal window. Control returns to the INCOME (CORPORATE) TAX window.
11. Accept the data with the **OK** pushbutton in the INCOME (CORPORATE) TAX window. Control returns to the browser.
12. Choose the Table Icon for the ALLOWANCES node. The ALLOWANCES window is displayed.
13. Use the iconic buttons and data field to enter the value **11,500** for each of the periods **7/2003** to **7/2007** in the INVESTMENT ALLOWANCE column.
14. Accept the data with the **OK** pushbutton in the ALLOWANCES window.

D. ECONOMIC DATA ENTRY

The economic costs and benefits and the economic rate of return are of interest to the decision makers, as are the foreign exchange impact of the project and employment effects.

Nodes in the financial structure which require adjustments for cost-benefit analysis are assigned with the **Assign economic analysis** feature of the EDIT menu.

Only those items from the financial analysis that have a significant impact on the economic appraisal should be selected. The most important candidates for adjustment have both large value and price distortion.

In this case, all items requiring adjustment are assigned to the ECONOMIC ANALYSIS node in the browser using the **Assign economic analysis** feature of the EDIT menu. In some instances the data structure must be modified from that used in the financial analysis to accommodate the economic data. These modifications are defined in the corresponding sections of the case description. **

The procedure for assigning nodes from the financial section of the browser to the ECONOMIC ANALYSIS node is as follows:

ASSIGN ECONOMIC ANALYSIS

- 1. Select the node in the financial section of the browser to be assigned.
- 2. Choose **Assign economic analysis** in the EDIT menu.

The node is automatically created in the appropriate section of the ECONOMIC ANALYSIS structure.

1. Global parameters

Parameters established for the economic analysis of the project are shown in table 54.

NUMÉRAIRE CURRENCY	LOCAL CURRENCY AT DOMESTIC PRICES
Official exchange rate (OER)	BS 65 per 1 US\$ (or BS 1 per FB 1)
Shadow exchange rate (SER)	BS 78 per 1 US\$ (or BS 1.2 per FB 1)
Standard conversion factor (SCF = OER/SER)	0.833
Economic discount rate	12%

Table 54: Parameters for the economic analysis

- 1. Choose the Extend Icon to extend the ECONOMIC ANALYSIS node.
- 2. Choose the Table Icon for the GLOBAL PARAMETERS node. The GLOBAL PARAMETERS window is displayed.
- 3. Select the **Local currency at domestic price level** radio button.
- 4. The **Currency** in the drop-down list box cannot be changed for a numeraire expressed in local currency (the default value is the local currency in the CURRENCIES window, in this case **thousand bolsa**).
- 5. Select **Absolute** in the UNITS drop-down list box.
- 6. Enter **1.2** for the **Foreign currency conversion factor** in the STANDARD CONVERSION FACTOR AND SHADOW PRICING panel (the standard conversion factor is automatically calculated as **0.8333**).

** The SAHARA1.C30 file (data for financial analysis) may serve as the source file when starting the economic analysis. SAHARA2.C30 contains also the economic data for comparison.

7. Select the ECONOMIC RATE OF DISCOUNT field and enter **12%**.
8. Accept the data in the GLOBAL PARAMETERS window with **OK**.

COMFAR III Expert - [Global parameters - Project1. (Industrial)]

File Module Edit Display Print Graphics Project PES ?

Numeraire and currency used

☒ Local currency at domestic price level

☐ Local currency at border price level

☐ Foreign currency at border price level

Currency: thousand bolsa

Units: Absolute

Standard conversion factor and shadow pricing

Standard conversion factor: 0.8333

Foreign currency conversion factor: 1.2000

Discounting

Economic rate of discount: 12.00 %

OK Cancel

Figure 76: Global parameter window

2. Fixed investment costs

The breakdown of fixed investment costs in local and foreign currency is given in table 37.

LAND

The opportunity cost of 6.75 hectares of land devoted to the project is the net agricultural benefit of BS 225,000 per hectare (ha) or BS 1.52 million per annum for the 12-year planning horizon. At an estimated 12% economic discount rate, this amounts to BS 9.3 million at present value.

1. Assign the LAND node to the ECONOMIC ANALYSIS section of the browser.
2. Choose the Table Icon for the LAND node in the INPUTS - FIXED INVESTMENT structure of the economic browser. The ADJUSTMENT OF INPUTS window is displayed for land.

3. Select the **Non-traded** radio button. The NON-TRADED panel is displayed in the ADJUSTMENT OF INPUT window.
4. Select the ADJUSTED MARKET VALUE field and enter **9,300**.
5. Select the FOREIGN CURRENCY EXPOSURE field and enter **0**.
6. Accept the data with the **OK** pushbutton.

COMFAR III Expert - [Adjustment of inputs - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: Land purchase

Origin: Fixed investment costs

Currency: thousand bolsa ☒ Local ☐ Foreign

	Period	Quantity	Price	Total
First appearance	7/2001	1.00	10,800.00	10,800.00
Reference year	7/2006	1.00	0.00	0.00

Taxes/duties included: 0.00 %

Value-added included: 0.00 % 0.00 % 0.00 % Rest: 100.00 %

☒ Non-traded ☐ Tradable

☒ Consumer price (including taxes and duties)

☐ Producer price: tBS

Financial value: 10,800.00 tBS

Adjustment factor: 0.86

Adjusted market value: 9,300.00 tBS

Foreign currency exposure: 0.00 %

Calculation support...

OK Cancel

Figure 77: Adjustment of input window with non-traded panel

SITE DEVELOPMENT

Site development is carried out by one of the many available contractors with heavy earth-moving machinery operated by trained workers. The machinery is currently operating below capacity because skilled labour is scarce - a situation which is expected to continue for the next 3-5 years. No increase in imports of earth-moving equipment is required; the earth-moving machinery, therefore, is considered a sunk cost. The cost of the other inputs is determined by current operating costs valued at their shadow prices.

Approximately 60% of the market prices of site development costs represents skilled labour costs (shadow wage rate for skilled labour is the financial cost). The remaining 40% breaks down as shown in table 55.

ITEM	SOURCE	DUTIES (%)	PERCENTAGE OF SITE DEVELOPMENT COST
Fuel	Import	10	20
Spare parts	Import	0	15
Other inputs	Non-traded		5

Table 55: Site development costs

To accommodate the economic data, the financial SITE DEVELOPMENT node is divided into four subnodes as indicated above.

1. Select the SITE DEVELOPMENT node.
2. Use **Insert** in the EDIT menu to define four subnodes of the SITE DEVELOPMENT node (**SD skilled labour**, **SD fuel - foreign**, **SD spares - foreign**, **SD other non-traded**).
3. Divide the costs of SITE DEVELOPMENT between the four created nodes (**60**, **20**, **15** and **5%**, respectively).

The SKILLED LABOUR and OTHER data do not require adjustment. The SPARES node and FUELS nodes are changed in the financial browser to reflect FOREIGN EXCHANGE REQUIRED in thousand BS as the currency and the FOREIGN source.

- In the FUELS node the quantity has to be changed to 1 and the price to 500 so that the price of tFB 500 can be taken as financial value (FV) in the economic analysis (see below).

Only the SD FUEL - FOREIGN node is assigned to the economic section of the browser. Adjustments to this node are as follows:

1. Assign the SD FUEL - FOREIGN node to the economic browser.
2. Select the economic SD FUEL - FOREIGN node in the INPUTS - FIXED INVESTMENT COSTS structure. The ADJUSTMENT OF INPUTS window is displayed.
3. Select the TAXES/DUTIES INCLUDED field and enter **9.09%** ($\{1 - [1/1.10]\} \times 100$). Note, however, that this does not affect the calculation of the adjusted market value, which is defined initially by the CIF price (see below). These calculations are necessary because the values are gross prices.
4. Since the item is of foreign origin, only the **traded** radio button and **imports** in the TRADED drop-down list box are active (no selections are possible). The IMPORTS panel is displayed in the ADJUSTMENT OF INPUTS window.

COMFAR III Expert - [Adjustment of inputs - Project1. (Industrial)]

File Module Edit Display Print Graphics Project SHARE ?

Description: SD - fuel, foreign

Origin: Fixed investment costs

Currency: thousand bolsa ☐ Local ☒ Foreign

	Period	Quantity	Price	Total
First appearance	7/2001	1.00	500.00	500.00
Reference year	7/2006	1.00	0.00	0.00

Taxes/duties included: 9.09 %

Value-added included: 0.00 % 0.00 % 0.00 % Rest: 100.00 %

☐ Non-traded ☒ Traded

Imports

Currency: Forex required in tBS

CIF: 454.55

Financial value: 500.00 tBS

Adjustment factor: 0.91

Adjusted market value: 454.55 tBS

Foreign currency exposure: 100.00 %

Calculation support...

OK Cancel

Figure 78: Adjustment of inputs window - imports panel

5. Select **Forex required in tBS** in the CURRENCY list box to include this item in the foreign exchange effect calculations.
6. Enter **454.55** in the CIF field to reflect the actual import price (the price net of import duties = $500 \times 0.909 = 454.55$, or 90.91% of the financial value).

The adjusted market value (AMV) is set to the CIF value (expressed in local currency). The import duties are not part of the economic value. The adjustment factor (AF) is calculated as AMV/FV .

7. Select the FOREIGN CURRENCY EXPOSURE field and enter **100%**.
8. Accept the data with the **OK** pushbutton.

CIVIL WORKS

Costs for civil works are broken down as shown in table 56.

COMPONENT	PERCENTAGE OF TOTAL	IMPORT DUTY	SUBSIDY
Imports	46	11.85 % ^a	
Cement	17		18 % ^b
Labour unskilled	11		
Other	26		
TOTAL	100		

Table 56: Civil works costs

The financial value of all of the OTHER costs reflects their economic value. The remaining cost components require adjustments. The CIVIL WORKS node in the financial section of the browser is divided into four nodes with a procedure similar to that for SITE DEVELOPMENT (CW - imports, CW - cement, local, CW - unskilled labour, CW - other, non-traded); then use the **Share (%)** feature of the INSERT NEW ITEMS modal window to assign the proper costs to each node and accept the entries with OK.

In the financial CW IMPORTS node the currency is changed to FOREX REQUIRED IN TBS and source to FOREIGN. Transfer the first three nodes above to the economic section of the browser using **Assign economic analysis** in the EDIT menu.

Imports

Adjustment of the CW - IMPORTS node to identify the import duties and to define the foreign currency exposure is performed as follows:

1. Choose the Table Icon for the CW - IMPORTS node in the INPUTS - FIXED INVESTMENT COSTS section of the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
2. Select the TAXES/DUTIES INCLUDED field and enter **10.59%*** ($\{1 - [1/1.1185]\} \times 100$). Note, however, that this information is not used in the determination of AMV for cost-benefit analysis.
3. Since the item is of foreign origin, only the **traded** radio button and **imports** in the TRADED drop-down list box are active (no selections are possible). The IMPORTS panel is displayed in the ADJUSTMENT OF INPUTS window.
4. Select **Forex required in tBS** in the CURRENCIES drop-down list box.

^a Weighted average.

^b Based on financial price.

* Rounded figure

5. Select the CIF field and enter **53,020*** ($59,300 \times 89.41/100$). The price shown in the list box is the price (**59,300**) appearing first in the corresponding data input column (searching from top down). The AF is calculated as AMV/FV .
6. Select the FOREIGN CURRENCY EXPOSURE field and enter **100%**.
7. Accept the data with the **OK** pushbutton.

Cement

The economic cost of cement is increased by the amount of subsidy.

1. Choose the Table Icon for the CW - CEMENT, LOCAL node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
2. Select the **Non-traded** radio button (the NON-TRADED panel is displayed).
3. Select the Consumer price (including taxes and duties) radio button.
4. Select the ADJUSTMENT FACTOR field and enter the adjustment factor **1.18** (to reflect the 18% subsidy).
5. Accept the data with the **OK** pushbutton.

Labour, unskilled

Unskilled labour is valued economically at 90% of wages.

1. Choose the Table Icon for the CW - UNSKILLED LABOUR node. The ADJUSTMENT OF INPUTS window is displayed.
2. Select the **Non-traded** radio button (the NON-TRADED panel is displayed).
3. Select the **Consumers price (including taxes and duties)** radio button.
4. Select the ADJUSTMENT FACTOR field and enter the adjustment factor **0.9**.
5. Accept the data with the **OK** pushbutton.

The labour content of fixed investment which occurs during the construction phase is not included automatically as part of labour costs for purposes of distribution analysis (it is an indirect effect of the project). This information is taken only from nodes identified as LABOUR or SALARIES, WAGES or their subnodes. To include such costs in the analysis, the costs must be transferred to a node (or one of its subnodes) so designated in the default structure. This is particularly important for employment analysis but is not done in this case (the actual job creation is understated).

PLANT MACHINERY AND EQUIPMENT

An item expressed in foreign exchange, but not assigned to the economic browser, is valued at the shadow exchange rate for its designated currency. If the only price distortion is foreign exchange, such items need not be transferred to the economic browser.

PLANT MACHINERY AND EQUIPMENT are imported capital goods valued at CIF prices. However the cost of inland handling and transportation charges to the project site amount to 6% of the CIF price. Imported machinery and equipment are free of import duties and taxes, and market prices of handling and transportation reflect their economic value. To make these adjustments, the node is assigned to the economic browser with the **Assign economic analysis** feature of the EDIT menu.

The **Calculation support** feature is used to reflect the local currency payments for inland services.

1. Assign the PLANT MACHINERY AND EQUIPMENT parent node to the economic browser (all subnodes are assigned automatically).
2. Choose the Table Icon for the IMPORTED MACHINERY AND EQUIPMENT node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
3. Since the item is of foreign origin, only the **traded** radio button and **imports** in the TRADED drop-down list box are active (no selections are possible). The IMPORTS panel is displayed in the ADJUSTMENT OF INPUTS window.
4. Select **Forex required in tBS** in the CURRENCIES drop-down list box.
5. Select the CIF field and enter the first year value, **16,500**.
6. Choose the **Calculation support** pushbutton. The CALCULATION SUPPORT modal window is displayed.
7. Use the iconic buttons and data field to enter the **FV** for transport (**990**, or 6% of the CIF value).
8. Enter **0** as the **Foreign currency exposure** for transport.
9. Choose **OK** to accept the data. The FV, AF, AMV and FCE are transferred automatically from the CALCULATION SUPPORT modal window to the PLANT MACHINERY window.

INSTALLATION

These costs are to cover local consulting and contracting services and specialized tools and accessory parts. Financial charges for these inputs are assumed to adequately reflect their economic value.

UTILITIES

Utilities costs in the two years of the construction phase in local and foreign currency are shown in table 57.

YEAR	2001	2002
Imported (tFB)	9,100	1,700
Non-traded (tBS)	14,500	2,600

Table 57: Utilities costs

The imported components are quoted at factory gate including an import tax of 8%. The domestic component is for non-traded inputs which are valued at producer price, which is 80% of the consumer price.

UTILITIES nodes for the foreign and local components were created in the financial section under CIVIL WORKS. These nodes are assigned to the economic browser with the **Assign economic analysis** feature of the EDIT menu.

Imported utilities

1. Select the UTILITIES, FOREIGN node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
2. Enter **7.41%*** ($\{1 - [1/1.08]\} \times 100$) in the TAXES/DUTIES INCLUDED field. Note, however, that this information is not used in the determination of AMV for cost-benefit analysis.
3. Since the item is of foreign origin, only the **traded** radio button and **imports** in the TRADED drop-down list box are active (no selections are possible). The IMPORTS panel is displayed in the ADJUSTMENT OF INPUTS window.
4. Select **Forex required in tBS** in the CURRENCIES drop-down list box.
5. Select the CIF field and enter **8,425.69** ($9,100 \times 92.59/100$).
6. Select the FOREIGN CURRENCY EXPOSURE field and enter **100%**.
7. Accept the data with the **OK** pushbutton.

* Rounded figure

Non-traded utilities

1. Select the UTILITIES, LOCAL node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
2. Select the **Non-traded** radio button.
3. Select the **Producer price** radio button and enter **11,600** ($14,500 \times 0.8$) in the corresponding field. The adjusted market value is automatically assigned and the adjustment factor calculated.
4. Select the FOREIGN CURRENCY EXPOSURE field and enter **0%**.
5. Accept the data with the **OK** pushbutton.

VEHICLES AND FURNITURE

The imported inputs include a 25% import duty. Nodes are already created in the financial section for the traded and non-traded components. Only the VEHICLES AND FURNITURE - F node is assigned to the economic browser. Entries for this item are similar to those for UTILITIES, FOREIGN above with the exceptions that TAXES/DUTIES INCLUDED is **20** ($\{1 - [1/1.25] \times 100\}$) and the CIF value for the first year is **2,000** ($2,500 \times 80/100 = 2,000$).

CONTINGENCIES

The entire provision for contingencies is for possible errors in estimation of the quantity of work involved, particularly in civil works and site development. There is no price contingency included. No adjustment is necessary.

PRE-PRODUCTION EXPENDITURES

As this item represents only 1% of the total investment costs, economic pricing will have little bearing on the economic appraisal.

INITIAL WORKING CAPITAL

A three months' supply of yarn inventories for the first production year is purchased in the second year of construction and is included in the initial investment as (initial) permanent working capital. These amounts are included as ANNUAL ADJUSTMENTS in the financial windows for each type of yarn. Type E and F yarns are imported for the first two years of production.

These initial inventories were entered as ANNUAL ADJUSTMENTS in the PRODUCTION COSTS window for yarns for each type of fabric. The value of initial inventory of yarns for each type of fabric is as shown in table 58.

YARN TYPE	INITIAL WORKING CAPITAL, (tBS) ^a
A	33,684.72
B	14,717.04
C	3,800.43
D	10,817.64
E	9,061.18
F	2,982.92

Table 58: Permanent working capital requirements

These items have been entered previously in the financial data and are adjusted for economic value as part of the PRODUCTION COSTS adjustments described below.

3. Production costs

RAW MATERIALS

The main raw material for the project is spun cotton/synthetic yarn. Cotton yarn is purchased locally while viscose and polyester yarn, types E and F, are imported for the first two years of production. Although there are no duties on cotton yarn, an import duty of 12% is charged on the CIF price of imported viscose and polyester yarn. From 7/2005 onwards all raw materials are purchased locally from supplier that produce at full capacity levels. The producers of viscose and polyester have to import some of their raw materials. (Assume that the imported inputs have no duties.) A breakdown of the consumer price is shown in table 59 (the demand price is relevant in this case).

COMPOSITION OF CONSUMER PRICE FOR RAW MATERIAL TYPES E AND F (%)	
Imported inputs	30
Local inputs	20
Skilled labour	20
Unskilled labour	10
Overhead and profit	20
TOTAL	100

Table 59: Breakdown of consumer price

Separate nodes were created in the financial browser for the imported yarns E and F and for locally purchased yarns. Nodes for the local yarns are now divided each into three parts to accommodate IMPORTED INPUTS, LABOUR - UNSKILLED and OTHER (OTHER includes local yarn costs net of imported inputs and unskilled labour; the other costs need no adjustment).

^a Foreign exchange equivalent for types E and F for initial stock and in the first two production years.

The following describes the procedure for the YARNS-EL node; a similar procedure is applied to the YARNS-FL node using the same percentage distribution for the created nodes.

1. Select the YARNS-EL node in the financial browser.
2. Use the **Insert** feature of the EDIT menu to create three subnodes of the YARNS-EL node: **Yarns-EL import**, **Yarns-EL unskilled labour** and **Yarn-EL other**.
3. Use the **Share (%)** feature of the INSERT NEW ITEMS modal window to transfer **30**, **10** and **60%**, respectively, to each of the three newly created nodes.
4. In the financial YARNS-EL - IMPORT node, **currency** is changed to **Forex required in tBS** and the source is **foreign**.

Assign the nodes YARNS-EL IMPORT and YARNS-EL UNSKILLED LABOUR and the corresponding nodes for YARNS-FL to the economic browser.

It is not necessary to transfer the nodes corresponding to imports of types E and F yarns in the first two production years, YARNS-EF and YARNS-FF, to the economic browser. All items designated in foreign currency are valued at the shadow exchange rate (SER). Therefore, it is only necessary to select FOREX REQUIRED IN TBS (TFB) as the currency in the financial windows for these items. This has already been adjusted in the financial browser.

Imported components of domestically purchased yarns

The yarns type E and F are identified as imports and the 12% import duty is taken into account in the economic pricing. The procedure is described for yarns-EL; a similar procedure is applicable to yarns-FL.

1. Select the Table Icon for the YARNS-EL IMPORT node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
2. Select the TAXES/DUTIES INCLUDED field and enter **10.71^a** ($\{1 - [1/1.12]\} \times 100$). Note, however, that this information is not used in the determination of AMV for cost-benefit analysis.
3. Since the item is of foreign origin, only the **traded** radio button and **imports** in the TRADED drop-down list box are active (no selections are possible). The IMPORTS panel is displayed in the ADJUSTMENT OF INPUTS window.
4. Select **Forex required in tBS** in the CURRENCIES drop-down list box.
5. Select the CIF field and enter the first appearance financial value **105.18^a** ($117.8 \times 89.29^a/100$).

For the YARNS-FL IMPORT node, the entry is **71.25^a** ($79.8 \times 89.29/100$).

^a Rounded figure

6. The foreign currency exposure is **100%** (default value).
7. Accept the data with the **OK** pushbutton.

Unskilled labour components of domestically purchased yarns

The economic value of unskilled labour is adjusted to 80% of wages. The procedure is applicable for type E yarns as well as type F yarns.

1. Select the Table Icon for the YARNS-EL UNSKILLED LABOUR node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
2. Select the **Non-traded** radio button.
3. Select the **Consumer price** radio button.
4. Select the ADJUSTMENT FACTOR field and enter **0.8**.
5. The foreign currency exposure is **0%** (default value).
6. Accept the data with the **OK** pushbutton.

PACKING MATERIAL

Packing materials are all locally procured and their components, paper, cardboards etc. are non-traded inputs. No adjustments are necessary.

CHEMICALS AND DYES

The chemicals and dyes used in fabric manufacture require special effluent treatment facilities, the cost of which is borne by the State as an incentive to the project. It is estimated that the economic cost of this treatment adds 30% to the actual import price. The CHEMICALS AND DYES nodes created in the financial browser for each product type are assigned to the economic browser with the **Assign economic analysis** feature of the EDIT menu.

The procedure is described for A - Chit. The treatment of the CHEMICALS AND DYES nodes for each product is identical.

1. Assign the CHEMICALS AND DYES-A node to the economic browser.
2. Choose the Table Icon for the CHEMICALS AND DYES-A node in the economic browser. The ADJUSTMENT OF INPUTS window is displayed.
3. Since the item is of foreign origin, only the **traded** radio button and **imports** in the TRADED drop-down list box are active (no selections are possible). The IMPORTS panel is displayed in the ADJUSTMENT OF INPUTS window.
4. Select **Forex required in tBS** in the CURRENCIES drop-down list box.
5. Enter the **CIF** price, **3.0**, which is the initial AMV.
6. Enter **1.3** for the **AF**.
7. The foreign currency exposure is **100%** (this is the default value).
8. Accept the data with the **OK** pushbutton.

SALARIES AND WAGES

Unskilled labour in and around the factory site is plentiful. Large numbers of landless agricultural labourers are available. Skilled manpower for the textile industry, on the other hand, is in short supply, and the factories have to compete with other firms for this type of personnel. The real cost of labour to the economy as a whole is 80% of the figures shown for unskilled categories and 100% for skilled categories. Similarly, salaries for the managers and administrative staff reflect real costs.

The number of operating personnel is broken down by category as shown in table 60.

CATEGORY	ADM.	SKILLED	UNSKILLED	TOTAL
Admin. and supervisory	30	60	-	90
Operators	-	50	90	140
Servicing and maintenance	-	30	25	55
Yarn winding	-	60	50	110
Finishing section	-	45	45	90
Workshops and stores	-	35	30	65
Miscellaneous	-	20	60	80
TOTAL	30	300	300	630

Table 60: Number of operating personnel by category

Wages are broken down according to categories as shown in table 61.

	PERCENTAGE
Unskilled labour	16.9
Skilled labour	50.5
Managers	5.7
Admin./supervisors	26.9
TOTAL	100.0

Table 61: Wages by category

Adjustment to the price of unskilled labour is required. The UNSKILLED LABOUR node for each type of fabric is assigned to the economic browser with the **Assign economic analysis** feature of the EDIT menu. For the nodes YARNS-EL UNSKILLED LABOUR and YARNS-FL UNSKILLED LABOUR it is assumed that the adjustment factor already entered includes the adjustment for unskilled labour. All other nodes for labour and SALARIES, WAGES are assumed to include skilled labour.

The procedure described for unskilled labour associated with fabric A - Chit is applied to unskilled labour for all other fabric types.

1. Choose the Table Icon for the UNSKILLED LABOUR node for A-Chit fabric.
2. Select the **Non-traded** radio button.

3. Select the **Consumer price** radio button.
4. Select the ADJUSTMENT FACTOR field and enter **0.80**.
5. Accept the data with the **OK** pushbutton.

MAINTENANCE

Maintenance is treated as a non-traded item and requires no adjustment.

ENERGY

Fuel oil is imported and carries a 10% import duty; 40% of the financial cost for energy is for fuel oil and the remaining 60% for non-traded inputs, which require no adjustment.

The ENERGY nodes for each fabric type in the financial browser are divided into two nodes to accommodate the imported and non-traded components. The procedure is described for A - Chit fabric; a similar procedure is applied to the ENERGY node for each fabric type.

1. Select the ENERGY node for A - Chit fabric in the financial browser.
2. Use the **Insert** feature of the EDIT menu to create two subnodes ENERGY-AF (FUEL) and ENERGY-AL.
3. Use **Share (%)** in INSERT NEW ITEMS modal window to assign **40%** of the energy cost to the ENERGY-AF (FUEL) node and **60%** to the ENERGY-AL node.
4. Select **Forex required in tBS** in the CURRENCIES drop-down list box and the **Foreign** radio button.
5. Assign the ENERGY-AF (FUEL) node to the economic browser using the **Assign economic analysis** feature of the EDIT menu.
6. Choose the Table Icon for the ENERGY-AF (FUEL) node in the economic browser.
7. Select the TAXES/DUTIES INCLUDED field and enter **9.09%** ($\{1 - [1/1.1]\} \times 100$).
8. The **traded** radio button and **imports** in the drop-down list box are active.
9. Select **Forex required in tBS** in the CURRENCIES drop-down list box.
10. Select the CIF field and enter **3.727** ($4.1 \times 90.91/100$).
11. The foreign currency exposure is **100%** (default value).
12. Accept the data with the **OK** pushbutton.

SALES AND ADMINISTRATION COSTS

This item is treated as non-traded and needs no adjustment.

4. Benefits

Cotton/synthetic fabrics of the type proposed for production are usually low priced in Sahara and are used in the manufacture of such items as shirts, scarves, women's dresses, curtains, bedsheets etc. About 70% of the total domestic consumption of cotton/synthetic fabrics is marketed in rural areas and among urban lower income groups. The Government, therefore, does not charge duties on imported fabrics.

Expected sales prices of fabrics are 5% lower than CIF prices at the official exchange rate. It is estimated that 50% of the output is import substituting. Inland transport and handling costs from port to market (external to the project) are 2% and 3%, respectively, of CIF at the OER (transport and handling of finished fabrics from factory to market are already included in the operating costs).

Costs per metre of fabric are shown in table 62.

FABRIC	SALES PRICE (BS)	CIF (FB)	TRANSPORT (BS)	HANDLING (BS)
A	200	210	4.20	6.30
B	110	116	2.32	3.48
C	70	74	1.48	2.22
D	40	42	0.84	1.26
E	200	210	4.20	6.30
F	200	210	4.20	6.30

Table 62: Sales prices and costs

The transport is fully priced economically, but 20% of the cost is foreign exchange. The handling charges overstate the economic value by 25% (adjustment factor = 0.8).

The procedure below is described for A - Chit fabric. A similar procedure is applicable to the other fabrics.

1. Select the A - CHIT node in the SALES PROGRAMME structure of the financial browser.
2. Use the **Insert** feature of the EDIT menu to create two subnodes of the A - CHIT node, A-LOCAL NEW and A-IMPORT SUBSTITUTION.
3. Use **Share, %** in the list box to assign 50% of the costs to each of the new nodes.
4. Assign the A - IMPORT SUBSTITUTION node to the economic browser.
5. Select the Table Icon for the A - IMPORT SUBSTITUTION node in the economic browser.
6. Select the **Tradable** radio button.
7. Select **Importable** in the drop-down list box.
8. Select **Forex required in tBS** in the CURRENCY drop-down list box.

9. Select the CIF field and enter **210**.
10. Select the IMPORTABLE field and enter **100%**.
11. Choose the **Calculation support** pushbutton. The CALCULATION SUPPORT modal window is displayed. The FV, AF, AMV and FCE for A - IMPORT SUBSTITUTION fabric are displayed in the CIF column.
12. Use the iconic buttons and data field to enter the financial values (FV) for **Transport** and **Handling** (**4.20** and **6.30**, respectively).
13. Use the iconic buttons and data field to enter the adjustment factors (AF) for **Transport** and **Handling** (**1.0** and **0.8**, respectively).
14. Use the iconic buttons and data field to enter the foreign currency exposure (FCE) for **Transport** and **Handling** (**20** and **0**, respectively). The FCE for CIF is **100%** by default.
15. Accept the data in the CALCULATION SUPPORT modal window with **OK**. Control returns to the A - IMPORT SUBSTITUTION window.
16. Accept the data in the A - IMPORT SUBSTITUTION window with **OK**.

5. Indirect monetary benefits

The project is expected to enhance the technical skills for the country, with a monetary benefit estimated at BS 10 million for the first year of operations and increasing at a rate of 15% per annum.

1. Choose the Table Icon for the BENEFITS, MONETARY node in the INDIRECT EFFECTS structure of the economic browser.
2. Select **thousand bolso** in the CURRENCY drop-down list box.
3. Select the **Local** radio button.
4. Select the ESCALATION field and enter **15%**.
5. Use the iconic buttons and data field to enter **10,000** for each production period (the escalation feature adjusts the values appropriately).
6. Accept the data in the BENEFITS, MONETARY node with **OK**.

6. Save data input

1. Choose **Save Project as** in the FILE menu.
2. Enter **Sahara** in the FILE NAMES field by typing the name at the keyboard (please refer to the note given in chapter II, *Tomato canning*).
3. Save the file by choosing **SAVE** in the SAVE PROJECT AS modal window. The file is now saved and can subsequently be retrieved. Only the input data are saved in the project file.

E. RESULTS

RESULTS are the pro-forma financial and economic reports (schedules and graphs) produced by the program from calculations performed on the corresponding data entries. The results can also be printed either on-line or in batch mode. The results are produced in a series of steps:

- Select results
- Calculations
- Show results

1. Select results

Results to be produced are selected from the select results browser.

- Choose **Select results** in the MODULE menu. The select results browser is displayed with the PROJECT - RESULTS node and the first-level nodes for each group of available schedules and graphs.

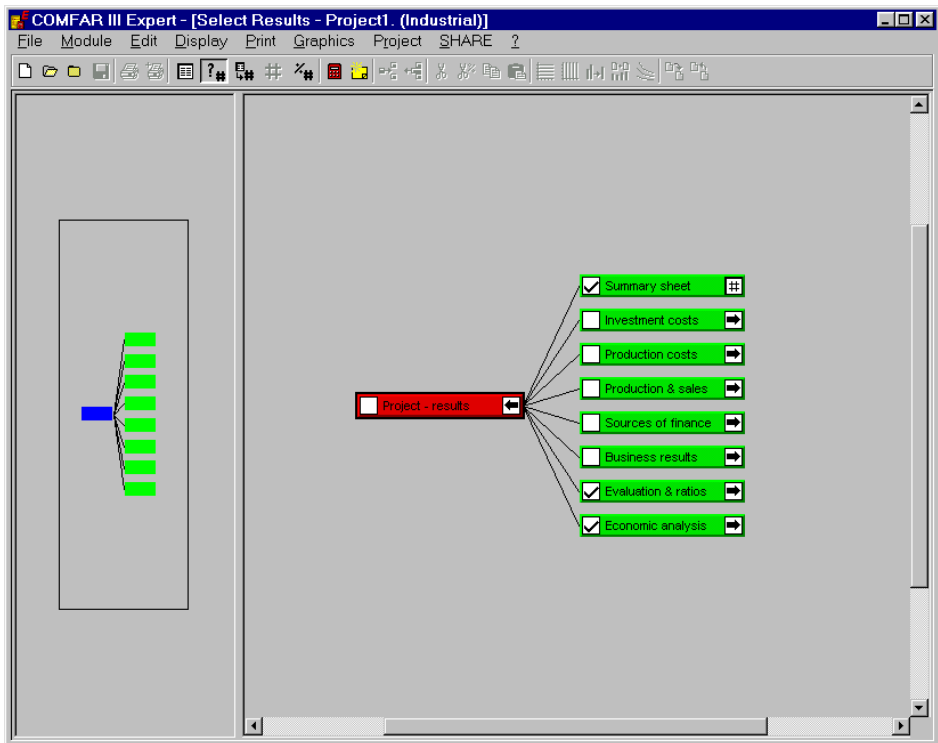


Figure 79: Select results browser with first-level nodes

Schedules and graphs are selected by clicking the Check Icon at the left of each node. When a blank Check Icon is selected a check appears inside the icon. This indicates that the node is selected for calculation. When a node containing the Extend Icon is selected, all its subnodes are automatically selected. A subnode can subsequently be deselected by clicking its Check Icon containing a check (the check disappears).

Only selected nodes are calculated and are thus available for display or print.

The most manageable procedure is to extend each group of nodes individually one stage at a time, selecting only those nodes for which calculations and results are required. This is accomplished by clicking the Extend Icon for a node with the left mouse button (clicking with the right mouse button extends the node fully and in some cases the structure is too large to fit on the screen).

Some nodes are selected automatically and cannot be deselected. For these nodes the Check Icon at the left of the node appears with a check which cannot be deleted.

Table 63 lists the nodes that are automatically selected and those that must be selected.

NODE	AUTOMATICALLY SELECTED	TO BE SELECTED BY USER	TYPE
SUMMARY	Always present	-	Table
INVESTMENT			
Fixed investment	Total	Foreign, local	Table
Pre-production expenditure	Total	Foreign, local	Table
Working capital	Total	Foreign, local	Table
Total investment	Total	Foreign, local	Table
[all charts]	Structure	-	Chart
PRODUCTION COSTS			
Total costs	Total	Foreign, local Variable, fixed	Table
Direct, indirect costs	-	All tables	Table
Cost centres	-	Total, costs by centre	Table
		Foreign, local, var/fixed	Table
[all charts]	Structure	-	Chart
PRODUCTION AND SALES			
Total sales	Total	Foreign, local, var/fixed	Table
A-Chit, B-Chelvar, C-Kodari,	Total	Foreign, local, var/fixed	Table
D-Garment, E-Upholstery,	Total	Foreign, local, var/fixed	Table
F-Men's shirting	Total	Foreign, local, var/fixed	Table
[all charts]	Structure	-	Chart
SOURCES OF FINANCE			
Financial flow	Total	Foreign, local	Table
	Foreign/local flow	-	Chart
	Equity/loan flow	-	Chart
Total debt service	Total	Foreign, local	Table
Debt service	-	Foreign, local	Table
[all charts]	-	Foreign, local	Chart
	-	Long-/short-term	Chart

Table 63: Nodes automatically selected and nodes to be selected for results calculation

NODE	AUTOMATICALLY SELECTED	TO BE SELECTED BY USER	TYPE
BUSINESS RESULTS			
Cash flow for financial planning	Total	Foreign, local	Table
	Periodical cash flow		Chart
[other charts]	Accum. CF, Net flow, Sales & production costs		Chart
Discounted cash flow	Total capital invested		Table
	Total equity invested		Table
[NPV charts, IRR]	Total capital, total equity	Joint-venture partners	Chart
Income statement & ratios	Total		Table
Product profitability	-	Fabrics A,B,C,D,E,F	Table
Break-even analysis	-	By product and period	Chart
Balance sheet and ratios	Total	-	Table
[all charts]	Structures (ratios)	-	Chart
EVALUATION AND RATIOS			
Financial ratios	Numerical ratios	-	Table
Efficiency ratios	Numerical ratios	-	Table
[all charts]	Structures (ratios)	-	Chart
ECONOMIC ANALYSIS			
Value added	VA criteria (numerical)	-	Table
	VA structures	-	Chart
Net foreign exchange effect	Numerical values	-	Table
Employment effect	Numerical values	-	Table
Economic appraisal	Numerical values	-	Table
	Net Present Values	-	Chart

Table 63: (continued)

Select the nodes for the above schedules and graphs by clicking the Check Icon at the left of each node (a check appears in the Check Icon when it is selected).

2. Calculations

The schedules for the selected nodes are calculated with CALCULATION in the MODULE menu.

The procedures for performing calculations of the selected schedules and graphs are described above in connection with the GROWMANIA GARMENTS case.

3. Show results

Numerical schedules and graphical results are displayed by choosing the Table Icon (numerical schedules) or Graphics Icon (graphical results) for a node in the show results browser.

The procedures for displaying tables and graphs are described above in connection with the GARMENTS case.

4. Print results

The results selected and calculated with SELECT RESULTS and CALCULATIONS in the MODULE menu can be printed either on line or in batch mode. The procedures for printing numerical schedules or graphs are described in the *Reference Manual*.

F. PARAMETRIC ANALYSIS

A simplified form of sensitivity analysis can be included in graphs. When PARAMETRIC ANALYSIS is defined for a graph, only the selected parameter is varied in the manner specified. Any interactions of the parameter with other project parameters are not included in this type of analysis. A more comprehensive form of sensitivity analysis in which such interactions are taken into account can be performed by choosing SENSITIVITY in the MODULE menu.

G. INFLATION

It is expected that domestic price inflation will continue at an average rate of 6% per annum, a rate that has prevailed during the past several years. The sponsors are interested in comparing some of the financial results considering the anticipated inflation with the constant price assumption.

The alternative situation with inflation can be developed from the original non-inflation study.

1. Choose **Load Project** in the FILE menu. The LOAD PROJECT modal window is displayed.
2. Select **Sahara.C30** in the FILENAMES list box.
3. Accept the selection with the **OPEN** pushbutton. The original case is now displayed. The data input browser is displayed. If not, choose **Data input** in the MODULE menu.

The necessary changes are as follows:

- Include descriptive text in the PROJECT IDENTIFICATION window to describe the inflation conditions.
 - Add INFLATION as a special feature.
 - Enter the data for the inflation of the local currency, thousand BS, in the INFLATION window.
1. Choose the Table Icon for the PROJECT IDENTIFICATION node.
 2. Modify the text to reflect the inflation in the local currency.
 3. Choose the **Special features** pushbutton.
 4. Select the **Inflation** check box in the SPECIAL FEATURES modal window.
 5. Accept the data with the **OK** pushbutton.
 6. Choose the Table Icon for the INFLATION node.
 7. Use the iconic buttons and data field to enter **6%** for each period of the planning horizon.
 8. Accept the data with the **OK** pushbutton in the INFLATION window.

9. Choose **Save Project as** in the FILE menu and save the project as **SAHINFL6.C30**.
10. After selection of results and calculation, the tables and charts for assessing the Sahara case under conditions of inflation may be displayed and printed.

CONTACT DETAILS

For further information please contact:

United Nations Industrial Development Organization,
c/o Industrial Promotion and Technology Branch
P.O. Box 300,
A-1400 Vienna, Austria

Fax: (43-1) 26026 – 6807

Tel: (43-1) 26026 – 3877 or 4066 (Administrative support)
(43-1) 26026 – 3840 or 3855 (Technical support)

Email: comfar@unido.org

Web: <http://www.unido.org/comfar>

