



**Sustainable Water  
Integrated Management (SWIM) -  
Support Mechanism**



Project funded by  
the European Union

*Water is too precious to waste*

**Procedures, forms and Processing sheets at local level for  
the MONEVA system**

**SWIM-SM TRAINING OF THE USERS INVOLVED IN THE PILOT IMPLEMENTATION OF THE REGIONAL M&E SYSTEM  
FOR THE MONITORING AND EVALUATION OF THE PIM/IMT PROCESS  
Amman , Jordan , 2 – 4 August 2015**

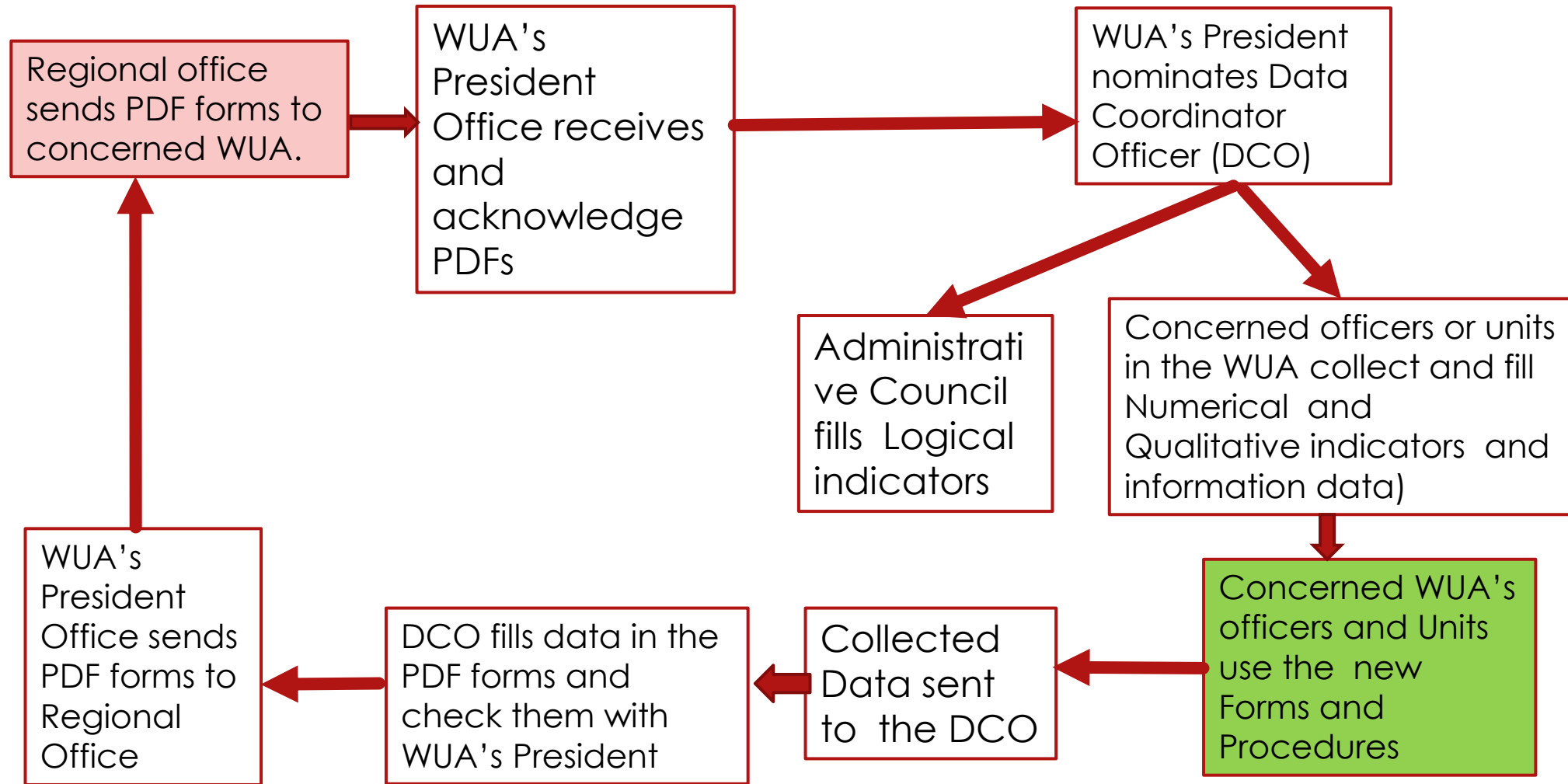
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Section 1:

Flow of the data collection and  
general description of the  
“Procedures and Data  
Collection Forms “

# Synthetic flow of data collection and main tasks



# How to input and process data

## ▶ Type of data in MONEVA :

1. **Simple data** : logical indicators, information data and some numerical variables (about 75 )
2. **Complex data** : qualitative indicators and some numerical variables and indicators (about 15 -25)

## ▶ Recommended processing of data :

1. Simple data  direct filling of data in the forms
2. Complex data:  use of "Procedures and data collection forms"

▶ Manually

▶ Using the Excel tables called : **Processing sheets**

# Detailed flow of data collection and main tasks involved (1)

Tasks Number	Description of task	Responsible person
<b>Task 1</b>	PDF forms sent to WUA by the concerned regional office	Head of concerned regional office
<b>Task 2</b>	PDF forms received at the office of the President of the Association and acknowledged receipt	President of WUA
<b>Task 3</b>	President of association assigns Coordinating Officer for collecting and filling the requested information	President of WUA
<b>Task 4</b>	Designated Data Coordinator Officer send the logical indicators to the Head of the Administrative Council	Designated Data Coordinator Officer
<b>Task 5</b>	Designated Data Coordinator Officer send the “Numerical” the “Numerical & Qualitative” indicators and the “Information data” to the concerned persons or units within the WUA to collect and fill the information	Designated Data Coordinator Officer
<b>Task 6</b>	The Head of the Administrative Council in consultation with the members fill the data related to logical indicators and information data and send data to Designated Data Coordinator Officer	The Head of the Administrative Council

# Detailed flow of data collection and main tasks involved (2)

Tasks Number	Description of task	Responsible person
<b>Task 7</b>	The concerned WUA's officers or units collect the required information (using the forms provided ) and fill the data related to the "Numerical" and the "Numerical & Qualitative" indicators following the Procedures and inserting the information in the data processing file or undertake calculations manually if computers are not available	Concerned WUA's officer or units
<b>Task 8</b>	All the data gathered under task 6 and 7 are sent to the Designated Data Coordinator Officer	<ol style="list-style-type: none"> <li>1. The Head of the Administrative Council</li> <li>2. Concerned WUA's officer or units</li> </ol>
<b>Task 9</b>	The Designated Data Coordinator Officer fills all the requested information in the PDF forms	Designated Data Coordinator Officer
<b>Task 10</b>	Information entered in the PFD is checked by the President of the WUA	President of WUA
<b>Task 11</b>	When the information has been verified and approved, the PDF forms are sent to the regional office according to the MONEVA procedures.	President of WUA

# Suggested distribution of the data to be collected among the staff of the WUA.

- ▶ The data to be collected is under the responsibility of different officers within the WUAs. It has been assumed that a medium size WUA has specialized staff for the major technical and financial responsibilities.
- ▶ For smaller WUAs some of the technical responsibilities may be grouped together and therefore the suggestions made here may also need to be grouped together.
- ▶ The following table groups together the variables and indicators of similar characteristics and can be used to assign the responsibilities for data collection and filling of information within the WUA.



## List of the Logical indicators

- C01010 Statutes of the WUA are available. .
- C01011 The transfer agreement has been signed. .
- C02070 WUA Auditing /Monitoring Committee is established. .
- C02080 Annual auditing/ monitoring Committee report (for the previous year) approved by the General Assembly Meeting.
- C02090 Annual financial report (for the previous year) is approved by the General Assembly.
- C02100 Annual "financial and work plan" approved by the general assembly.
- C02110 Committee/mechanism for conflict resolution and internal communication established.
- C02120 Annual Communication and conflict resolution report for the previous year approved by General Assembly.
- C03010 The planned water allocation (expressed in m<sup>3</sup>/ha) to be provided for the WUA, is announced at the beginning of the season by the Irrigation Agency
- C05010 Prepared operation guidelines are in use.
- C05020 Prepared maintenance guidelines are in use.
- C05030 Annual maintenance plan is prepared each year.
- C05040 Annual Operation Plan is prepared each year.
- C05050 Concerned staff has been trained in the use of the O&M guidelines during the last five years.
- C06010 A WUA system for record keeping and retrieval is in place.
- C06020 The financial system is operational.
- C06030 Guidelines for budget preparation are available.
- C06040 Guidelines for cost accounting, auditing and budgetary control are available.
- C07010 The manual of the WUA organization and functions is available.
- C07020 A recruitment policy is available.
- C07040 A communication system with water users is in use.
- C07050 WUA organizes training sessions for farmers
- C09010 The WUA has its own M&E system.
- C09021 The relevant staff of the WUA has been adequately trained to use the M&E system
- C09022 The relevant M&E results to be reported to the Irrigation Agency are identified
- C09023 The relevant M&E results are reported to the Irrigation agency
- C09024 The WUA produces an annual report with the analysis of the performance of the WUA and the annual results of the indicators of the M&E system
- D06010 The WUA is taking initiatives to remove contaminating materials such as: used plastics of green houses, pesticides packages etc...)



Table 1a . Numerical variables and indicators classified by business categories

No	Technical	Qualitative	Financial and administrative	HR	Water productivity	Environment
1	C03021	C04061	C05081	C07031	D04021	D05011
2	C03021.1	C04062	C05082	C07061	D04021.1	D06020
3	C03072	C05060	C06051	D09012	D04021.1.1	
4	C03023	C05070	C06052	D09013	D04021.1.2	
5	C03024	C07070	C06052.1		D04021.1.3	
6	C03041	C07080	C06091		D04021.1.4	
7	C03052		C06092		D04021.1.5	
8	C03071		C06092.1		D04021.2	
9	C03072		C03024		D04021.2.1	
10	C03081		C06101		D04021.2.2	
11	C03101		C06102		D04021.2.3	
12	C03102		C0102.1		D04021.2.4	

Table 1b . Numerical variables and indicators classified by business categories

No	Technical	Qualitative	Financial and administrative	HR	Water productivity	Environment
13	C03103		C06111		D04021.2.5	
14	C03104		C06112		<b>D04022</b>	
15	C04011		C06121		<i>D04022.1</i>	
16	C04012		C06122		D04022.1.1	
17	C04041		C06131		D04022.1.2	
18	C04042		C06151		D04022.1.3	
19	C04051		C08021		D04022.1.4	
20	C04052		C08052		D04022.1.5	
21	C03024		C08011		<b>D04041</b>	
22	C03024				<i>D04042.1</i>	
23	C08041					
24	C10011					

# Purpose of the “Procedures and Data Collection Forms “

1. The main purpose of the document called “Procedures and data collection forms” is to assist the staff of the WUAs to enter the information required by the MONEVA monitoring and evaluation system in a standard manner.
2. The use of these procedures will facilitate the comparison among the indicators of different WUAs since they are calculated using the same standards.
3. All the needed calculations can be done manually but to facilitate the calculations the document is complemented by an Excel Table called 'MONEVA Data Processing Sheet Local Level.xls' where all the numerical variables to be entered are listed in the spreadsheet called “Input 2MONEVA” and calculations are made in an automatic form. In case that the WUA has no computer facilities the Procedures and data collection forms provide examples of the calculations.
4. The “Procedures and data collection forms” document does not cover all the variables and indicators. It is mainly addressed to facilitate the calculation of the more complex variables.

# Description of the lay out of the Procedures and Data Collection Forms

- ▶ The document is structured in a consistent manner for all the variables analysed. Basically it covers the following 4 steps for each variable analysed:
  1. **Data process table.** It describes the main characteristics of the process and provides guidance with respect to the methodology to be used for the data collection, the data to be collected and some other descriptive aspects of the process.
  2. **Tasks table.** It provides the sequence of the tasks to be undertaken, when and by whom. The last 2/3 rows of the table provide guidance regarding the forms to be used and their location.
  3. **Examples of the forms to be used.** In the most general case 3 forms are needed, namely:
    - a) **Data collection forms,**
    - b) **Data processing forms:**
    - c) **Data Input forms.** Sometimes the information resulted of the data processing forms needs to be grouped together in different ways.
  4. **Annex 1 with the complete collection of data collection forms.**

# Description of the main tables of the Excel file called 'MONEVA Data Processing Sheet Local Level.xls

- ▶ 1. WUA fixed info
  - ▶ 2. WMIS Results
  - ▶ 3. Processing
  - ▶ 4. CropWaterRequirements
  - ▶ 5. Input2 MONEVA
  - ▶ LocalAll
- 
- ```
graph LR; T1[1. WUA fixed info] --> J(( )); T2[2. WMIS Results] --> J; T3[3. Processing] --> J; T4[4. CropWaterRequirements] --> J; J --> T5[5. Input2 MONEVA];
```



## Section 2: Calculation examples of selected numerical and qualitative indicators



# Example 1. Variable C04041: Average flow at the lower turnouts in pressurised irrigation systems. (process table)

| Process Name                        | Measuring Average flow at the lower turnouts in pressurised irrigation systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Variable C04041 |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------|
| <b>Process Description /purpose</b> | This variable, together with variable C04042 below, are necessary to calculate an indicator that measures if the difference in the farm inflow between the upper end and lower end turnouts is within acceptable limits that permit the efficient functioning of the pressurized irrigation network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                 |
| <b>Methodology</b>                  | <p>a. Selection of the lateral pipes<br/>The measurements will be undertaken over a minimum of 3 lateral pipes. It is important to select the lateral pipes to be representative of the main areas served by the irrigation system. It is suggested that the lateral 1 be selected within the first 300 m of the main pipe, lateral 2 between 300 and 600 m of the main pipe and lateral 3 somewhere after the 600 m of the main pipe. For WUAs having more than 800 ha, it is recommended to extend the measurements to 5 laterals.</p> <p>a. Selection of the turnouts<br/>In each of the 3 selected pipes the <u>last</u> turnout will be selected. Please ensure that the selected turnouts have a flow measuring device, otherwise portable measuring devices can be used. Ensure also that the selected turnouts function regularly and are easily accessible.</p> |  |                 |
| <b>Data collection</b>              | The data will be collected once a month for 3 consecutive months in the same day and same hour for each turnout in the selected lateral pipes. The 3 consecutive selected months should correspond to periods of high use of irrigation water.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                 |

# Example 1. Variable C04041: Average flow at the lower turnouts in pressurised irrigation systems. (Tasks table)

| Tasks                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                    | Responsibility              |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Task 1                                    | Initiate the process                                                                                                                                                                                                                                                                                                                                                                                           | WUA leader                  |
| Task 2                                    | <b>Select the lateral pipelines and turnouts</b> as per the methodology proposed above                                                                                                                                                                                                                                                                                                                         | WUA technical/water officer |
| Task 3                                    | <b>Data Collection:</b><br>See Form No. L.1 in Annex 1 "Data Collection form for numerical variables at the local (L) level"                                                                                                                                                                                                                                                                                   | WUA designated field staff  |
| Task 4                                    | <b>Send information to the designated WUA staff</b> responsible for entering and processing the data related to the MONEVA system                                                                                                                                                                                                                                                                              | WUA designated field staff  |
| Task 5                                    | <b>Data entry and processing:</b><br>See 'MONEVA Data Processing Local Level.xls', Sheet 'Processing', Data entry and processing form for the variable: C04041                                                                                                                                                                                                                                                 | WUA Designated officer      |
| Example of data collection and processing | <b>See table No.1 below</b>                                                                                                                                                                                                                                                                                                                                                                                    |                             |
| Proposed Start dates of process execution | <b>30 Sep to be repeated at the same time and same date on 30 October, and 30 November of the year are suggested.</b> However, users may select other months if more convenient, for example March, April and May.<br>Note: measurements of flow at the lower turnouts in the pressurised irrigation systems should take place at the same time and date as those for the upper turnouts (See Variable C04042) |                             |
| Proposed end dates of process execution   | <b>30 November of the year</b>                                                                                                                                                                                                                                                                                                                                                                                 |                             |
| Frequency of update of data in the MONEVA | <b>annual</b>                                                                                                                                                                                                                                                                                                                                                                                                  |                             |

# Example 1. Variable C04041: Average flow at the lower turnouts in pressurised irrigation systems. (Example Table )

Table 1.  
Example of  
Data  
collection  
and  
processing  
form for  
Variable  
C04041

| WUA Name                                                   | Baladna    |            |            |                                |  |
|------------------------------------------------------------|------------|------------|------------|--------------------------------|--|
| WUA Code                                                   | 203003     |            |            |                                |  |
| Year                                                       | 2015       |            |            |                                |  |
| Name of lateral selected                                   | Lateral 1  | Lateral 2  | Lateral 3  | Add more laterals if necessary |  |
| Number of turnout                                          | 21         | 23         | 17         |                                |  |
| Date of measurement No 1                                   | 30/09/2015 | 30/09/2015 | 30/09/2015 |                                |  |
| Date of measurement No 2                                   | 30/10/2015 | 30/10/2015 | 30/10/2015 |                                |  |
| Date of measurement No 3                                   | 30/11/2015 | 30/11/2015 | 30/11/2015 |                                |  |
| Time of measurement No. 1                                  | 13:30      | 13:30      | 13:30      |                                |  |
| Time of measurement No. 2                                  | 13:30      | 13:30      | 13:30      |                                |  |
| Time of measurement No. 3                                  | 13:30      | 13:30      | 13:30      |                                |  |
| Flow measurement No. 1 (l/s)                               | 12         | 8.5        | 10         |                                |  |
| Flow measurement No. 2 (l/s)                               | 13         | 9          | 8          |                                |  |
| Flow measurement No. 3 (l/s)                               | 10         | 10         | 7          |                                |  |
| Average flow per lower turnout in each lateral (l/s)       | 11.67      | 9.17       | 8.33       |                                |  |
| C04041: Average flow for the selected lower turnouts (l/s) |            |            | 9.72       |                                |  |

## Example 2. Variables C04061, C04062, C05060, C05070 related to the Farmers' Satisfaction of the WUA services and performance (Process table)

| Process Name                           | Farmers' Satisfaction Survey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Variables C04061, C04062, C05060, C05070 |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <b>Process Description</b>             | <b>Carry out a survey</b> to identify the degree of satisfaction of farmers with the performance of the WUA, with respect to uniformity of the flow & pressure, maintenance of the pressurised system and the overall performance of the WUA (as per form L.5 in annex 1)                                                                                                                                                                                                                                                                         |                                          |
| <b>Definition of Related Variables</b> | <p><b>C04061:</b> Percentage of farmers who are satisfied with the uniformity of the flow in the pressurised system.</p> <p><b>C04062:</b> Percentage of farmers who are satisfied with the uniformity of the pressure.</p> <p><b>C05060:</b> Percentage of farmers who are satisfied with the operation of the irrigation system.</p> <p><b>C05070:</b> Percentage of farmers who are satisfied with the maintenance of the irrigation system.</p> <p><b>C07070:</b> Percentage of farmers who are satisfied with the performance of the WUA</p> |                                          |

## Example 2. Variables C04061, C04062, C05060, C05070 related to the Farmers' Satisfaction of the WUA services and performance (Tasks table 2)

| Tasks  | Description                                                                                                                                                                                                                                                                               | Responsibility              |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Task 1 | Initiate process                                                                                                                                                                                                                                                                          | WUA leader                  |
| Task 2 | <b>Select farmers to be targeted by the survey.</b> The selection should be made at random within each group (20 farmers from the lower turnout, 10 from the middle, and 10 from the upper turnouts – total of 40 is recommended)).                                                       | WUA leader or Water officer |
| Task 3 | <b>Implement the survey</b> on all selected farmers using form No. L.5.1 in Annex 1                                                                                                                                                                                                       | WUA Designated staff        |
| Task 4 | <b>Fill in the survey results into the Form L.5.2 in Annex 1</b>                                                                                                                                                                                                                          | Designated WUA staff        |
| Task 5 | <b>Send the filled Form (L.5.2) to the designated WUA staff responsible</b> for entering and processing the data related to the MONEVA system                                                                                                                                             | WUA designated field staff  |
| Task 6 | <b>Data entry:</b><br>Enter the data of the filled Form L.5.2 into 'MONEVA Data Processing Local Level.xls', Sheet 'Processing', "Data entry form to enter and summarise the results of the "Farmers Satisfaction Survey" related to Variables: C04061, C04062, C05060, C05070 and C07070 | Designated WUA officer      |

## Example 2. Variables C04061, C04062, C05060, C05070 related to the Farmers' Satisfaction of the WUA services and performance (Tasks table 2)

|                                                        |                                                                                                                                                                                                                                                                                                                               |                        |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Task 7</b>                                          | <b>Data processing:</b><br>See 'MONEVA Data Processing Local Level.xls', Sheet 'Processing', "Data processing form to calculate the Variables C04061, C04062, C05060, C05070 and C07070 from the results of the "Farmers Satisfaction Survey"                                                                                 | Designated WUA officer |
| <b>Example of data collection/entry and processing</b> | Data Collection: See table No 5.1<br>Data Entry: See table No 5.2<br>Data Processing: See table No 5.3                                                                                                                                                                                                                        |                        |
| <b>Proposed Start dates of process execution</b>       | January                                                                                                                                                                                                                                                                                                                       |                        |
| <b>Proposed end dates of process execution</b>         | February                                                                                                                                                                                                                                                                                                                      |                        |
| <b>Frequency of questionnaire</b>                      | <b>Annual: C04061, C04062, C05060, C05070</b><br><b>Every three years: C07070</b><br>Note that the survey will reflect the degree of satisfaction of the farmers with the WUA performance during the preceding year for indicators C04061, C04062, C05060, C05070, and during the three preceding years for indicator C07070. |                        |
| <b>Frequency of update of data in the MONEVA</b>       | <b>Annual: C04061, C04062, C05060, C05070</b><br><b>Every three years: C07070</b>                                                                                                                                                                                                                                             |                        |



## Example 2. Variables C04061, C04062, C05060, C05070 related to the Farmers' Satisfaction of the WUA services and performance (Table 5.1 : Data collection form )

|                                                                                     |                                                                                             |                               |                         |                      |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------|-------------------------|----------------------|
| <b>WUA Name</b>                                                                     | Baladna                                                                                     |                               |                         |                      |
| <b>WUA Code</b>                                                                     | 203003                                                                                      |                               |                         |                      |
| <b>Date of the survey</b>                                                           | 1/1/2014                                                                                    |                               |                         |                      |
| <b>Name of the farmer surveyed (Optional)</b>                                       |                                                                                             |                               |                         |                      |
| <b>Development Area No. (Optional for Jordan)</b>                                   | DA26                                                                                        |                               |                         |                      |
| <b>Location of the farm unit</b><br>Please enter Yes against the appropriate answer | Lower turnout?                                                                              | Upper turnout?                | Middle turnout?         |                      |
|                                                                                     |                                                                                             | Yes                           |                         |                      |
| <b>Variable</b>                                                                     | <b>Object of evaluation</b>                                                                 | <b>Degree of satisfaction</b> |                         |                      |
|                                                                                     |                                                                                             | <u>Satisfied</u>              | <u>Medium satisfied</u> | <u>Not satisfied</u> |
| C04061                                                                              | To what extent you are satisfied with the uniformity of the flow in the pressurized system? | Yes                           |                         |                      |
| C04062                                                                              | To what extent you are satisfied with the uniformity of the pressure?                       |                               | Yes                     |                      |
| C05060                                                                              | To what extent you are satisfied with the operation of the irrigation system?               |                               |                         | Yes                  |
| C05070                                                                              | To what extent you are satisfied with the maintenance of the irrigation system?             |                               | Yes                     |                      |
| C07070 (to be collected every 3 years)                                              | To what extent you are satisfied with the performance of the WUA?                           |                               | Yes                     |                      |

## Example 2. Variables C04061, C04062, C05060, C05070 related to the Farmers' Satisfaction of the WUA services and performance (Table 5.2 : Data processing form )

| Date of Survey                                     | Farmer No. | Development Area No.(a) | Location of the farm unit (upper , lower, middle) | Degree of satisfaction with                           |                                 |                                         |                                           |                         |
|----------------------------------------------------|------------|-------------------------|---------------------------------------------------|-------------------------------------------------------|---------------------------------|-----------------------------------------|-------------------------------------------|-------------------------|
|                                                    |            |                         |                                                   | The uniformity of the flow in the pressurised system? | The uniformity of the pressure? | The operation of the irrigation system? | The maintenance of the irrigation system? | The WUA performance (b) |
| 31/12/2014                                         | 1          | DA 26                   | Upper                                             | 2(c)                                                  | 2                               | 2                                       | 2                                         | 2                       |
| 31/12/2014                                         | 2          | DA 26                   | Upper                                             | 1(d)                                                  | 1                               | 1                                       | 1                                         | 1                       |
| 31/12/2014                                         | 3          | DA 26                   | Upper                                             | 1                                                     | 1                               | 1                                       | 1                                         | 1                       |
| 31/12/2014                                         | 4          | DA 26                   | Lower                                             | 0 (e)                                                 | 0                               | 0                                       | 0                                         | 0                       |
| 31/12/2014                                         | 5          | DA 26                   | Upper                                             | 2                                                     | 2                               | 2                                       | 2                                         | 2                       |
|                                                    |            |                         |                                                   |                                                       |                                 |                                         |                                           |                         |
|                                                    |            |                         |                                                   |                                                       |                                 |                                         |                                           |                         |
|                                                    |            |                         |                                                   |                                                       |                                 |                                         |                                           |                         |
|                                                    |            |                         |                                                   |                                                       |                                 |                                         |                                           |                         |
| 31/12/2014                                         | 40         | DA 26                   | Lower                                             | 0                                                     | 0                               | 0                                       | 0                                         | 0                       |
| <b>No. of farmers who are satisfied (2)</b>        |            |                         |                                                   | <b>10</b>                                             | <b>10</b>                       | <b>10</b>                               | <b>10</b>                                 | <b>10</b>               |
| <b>No. of farmers who are medium satisfied (1)</b> |            |                         |                                                   | <b>20</b>                                             | <b>20</b>                       | <b>20</b>                               | <b>20</b>                                 | <b>20</b>               |
| <b>No. of farmers who are not satisfied (0)</b>    |            |                         |                                                   | <b>10</b>                                             | <b>10</b>                       | <b>10</b>                               | <b>10</b>                                 | <b>10</b>               |
| <b>Total No. of farmers surveyed</b>               |            | <b>40</b>               |                                                   |                                                       |                                 |                                         |                                           |                         |

### Notes

(a)Applicable for Jordan

(b) To be collected every three years

(c)Satisfied

(d) Medium Satisfied

(e) Not Satisfied

## Example 2. Variables C04061, C04062, C05060, C05070 related to the Farmers' Satisfaction of the WUA services and performance (Table 5.3 : Data input form )

| Variable/Sub-variable Code | Description                                                                                                        | Value      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------|------------|
| <b>C04061</b>              | <b>Percentage of farmers who are satisfied with the uniformity of the flow in the pressurized system.</b>          | <b>75%</b> |
| C04061.1                   | Total Number of farmers surveyed                                                                                   | 40         |
| C04061.2                   | Number of farmers who are satisfied and medium satisfied with the uniformity of the flow in the pressurized system | 30         |
| <b>C04062</b>              | <b>Percentage of farmers who are satisfied with the uniformity of the pressure.</b>                                | <b>75%</b> |
| C04062.1                   | Number of farmers who are satisfied and medium satisfied with the uniformity of the pressure                       | 30         |
| <b>C05060</b>              | <b>Percentage of farmers who are satisfied with the operation of the irrigation system.</b>                        | <b>75%</b> |
| C05060.1                   | Number of farmers who are satisfied and medium satisfied with the operation of the irrigation system               | 30         |
| <b>C05070</b>              | <b>Percentage of farmers who are satisfied with the maintenance of the irrigation system.</b>                      | <b>75%</b> |
| C05070.1                   | Number of farmers who are satisfied and medium satisfied with the performance of the WUA                           | 30         |
| <b>C07070</b>              | <b>Percentage of farmers who are satisfied with the performance of the WUA</b>                                     | <b>75%</b> |
| C07070.1                   | Number of farmers who are satisfied with the performance of the WUA                                                | 30         |

# Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use Process table No1 Purpose

| Process Name                        | Calculating Actual and budgeted costs for maintenance activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Variable C05081 |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------|
| <b>Process Description /purpose</b> | <p><b>Variable C05081 together with variable C05082</b> are necessary to calculate an indicator that measures the difference between the total actual and budgeted cost of maintenance activities for last year</p> <p><b>Variable C06091 together with variable C06092.1</b> are necessary to calculate an indicator that measures the difference between the total actual and budgeted direct maintenance costs for last year.</p> <p>By definition <b>direct maintenance costs equal all “maintenance costs” less “the cost of the WUA staff”</b>. Hence, the direct costs of maintenance reflect the variable costs of maintenance, since staff salaries are fixed costs.</p> <p><b>Variable C08021 is necessary to ensure that the cost of repairs due to illegal abstractions is decreasing with time.</b> Hence, cases of maintenance due to illegal use and the associated costs have to be recorded as part of the procedures for recording maintenance activities.</p> <p>The WUAs normally keep control of the maintenance expenditures including the time cost of the staff dedicated to maintenance activities, but often the criteria applied to include a cost are different, and therefore the results are not comparable.</p> <p><b>The purpose of this process is to provide some uniformity in the items that should be considered for the calculation</b> of the total maintenance and direct maintenance costs, and the costs of repairs due to illegal use..</p> |  |                 |

## Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use Process table No. 2 (Items to be considered)

### Items to be considered as maintenance activities

1. **WUA staff.** It is represented by the time cost of the WUA staff dedicated to maintenance activities.  
The operators of machines (tractors, loaders, etc. should not be included because their cost is normally included in the hourly cost of the respective machine **(see bullet 3)**.
1. **External manpower cost.** The cost of workers, technicians, and other persons that are paid for maintenance work and that are not part of the regular staff of the WUA should be accounted for.
2. **Machinery.** The cost of machinery (property of WUA or hired) used for maintenance work should be included. The cost of machinery is recorded by the hourly cost which includes many components (depreciation, operation , maintenance, machinery operator, insurance and others)
3. **Materials.** All the cost of material (cement, sand, wood, iron, herbicides, etc.) used for maintenance should be accounted for.
4. **Spare and replacement parts.** All spare and replacement parts, such as valves, measuring devices, pipes, motors, flanges, etc. used in a specific maintenance activity should be considered as maintenance costs.

**Note:** Items 2-5 are relevant to variables C05081, C05082, C06091, C06092.1 and C08021)

Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use Process table No. 3 (Items specifically excluded )

Items specifically excluded of the maintenance activities

1. Transportation vehicles (minibuses, cars, motorcycles, bicycles). As these vehicles render services to staff who offer different services (such as management, operation and maintenance services, etc.), it is difficult to assess precisely the time they dedicate to maintenance. However at the end of the year a moderate % of the total annual cost **of these vehicles** can be allocated to maintenance activities.
2. Oil, petrol, repairs, insurance of machinery. The hourly cost of machinery includes already all these costs and therefore they are already considered.

In the case of Jordan where the operation and maintenance of the pumping stations are the responsibility of JVA, the cost of such maintenance activities should not be included by the WUA.



### Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use Process table No. 4 (Data collection and difference between actual and budgeted maintenance )

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Data collection</b>                                          | <p>The data related to the actual maintenance costs (C05081 and C06091) <b>will be collected throughout the year</b> and will be summarised at the beginning of the following year (i.e. once all the costs for the previous year have been incurred). Maintenance activities related to illegal abstractions will be identified as part of the data collection procedure.</p> <p><b><u>For data collection related to the Budgeted or expected maintenance costs for any year (C05082 and C06092.1), these are normally included in the financial document presented to the General Assembly</u></b> at the beginning of that year or at the end of the preceding year for approval.</p>                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Difference between actual and budgeted maintenance costs</b> | <p><b><u>Actual maintenance costs of last year</u></b> refer to the real costs that took place during last year. This applies on both total maintenance costs and total direct maintenance costs. The summary of such costs should be presented to the General assembly at the beginning of every year as part of the financial document (budget) for the preceding year.</p> <p><b><u>Budgeted or expected maintenance costs for any year (C05082 and C06092.1)</u></b> refer to the costs that were planned for that year, which is normally included in the financial document presented to the General Assembly at the beginning of the year or at the end of the preceding year for approval. It can be lower, equal or higher than actual total maintenance or direct maintenance costs.</p> <p><b>The budgeted or expected maintenance cost for every year</b> can be either estimated as a percentage of the actual costs of the preceding year, or a more detailed estimation can be made, taking into account the needs for preventive maintenance.</p> |

Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use (Tasks table No. 1 )

| Tasks  | Description                                                                                                                                                                                                                                                                                          | Responsibility                   |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Task 1 | <b>Initiate the process of recording each maintenance activity and its costs if such process is not in place.</b> Process shall include documentation of maintenance activities related to illegal abstractions and their costs. Send the data collection form (Form L.7.1) to the financial officer | WUA leader                       |
| Task 2 | <b>Print Form No. L.7.1 in several copies and enter a “consecutive number of maintenance activities” on each form (1,2,3,4....etc.).</b> Avoid duplication of the same number in more than one form.                                                                                                 | WUA leader or financial officer  |
| Task 3 | <b>Distribute form No. L.7.1 to the staff responsible for the implementation of the maintenance activities.</b>                                                                                                                                                                                      | WUA leader or financial officer  |
| Task 4 | <b>Maintain a log of all the resources used for each maintenance activity (WUA staff, materials, spare and replacement parts (See form No. L7.1);</b> indicating for each activity if it is related to illegal abstraction or not by adding “X” next to “Yes” or “No”.                               | Designated WUA maintenance staff |

Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use (Tasks table No. 2 )

| Tasks   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Responsibility                   |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Task 5  | Send the filled form L.7.1 to the financial officer excluding the costs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Designated WUA maintenance staff |
| Task 6  | <p>- For each maintenance activity, enter the unit cost corresponding to each resource in the respective unit cost columns of Form L.7.1 and <b>calculate the cost per resource and per activity.</b></p> <p>- <b>Sum the costs of all resources</b> (staff, workers, machines, replacement parts, etc.) to obtain a total cost for the activity</p>                                                                                                                                                                                                                     | financial officer                |
| Task 7  | Summarise the information for each activity as per form L.7.2 and sum the costs of all the activities to get the annual maintenance costs .                                                                                                                                                                                                                                                                                                                                                                                                                              | WUA leader or Financial officer  |
| Task 10 | <p>Data entry &amp; processing of the summary results. .</p> <p><b><u>Variables C05081, C06091 and C08021:</u></b> Enter the summaries received into the 'MONEVA Data Processing Local Level.xls', Sheet 'Processing'; “Data entry and processing form of the summary of the recorded maintenance activities costs for the variables: C05081, C06091 and C08021”.</p> <p><b><u>Variables C05082 and C06092.1:</u></b> Enter the results received in the cells corresponding to these variables in the 'MONEVA Data Processing Local Level.xls', Sheet 'Input2MONEVA'</p> | WUA Designated officer           |

**Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use (Tasks table No. 3 )**

|                                                        |                                                                                    |
|--------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Example of data collection/entry and processing</b> | Data collection: See table No. 7.1<br>Data Entry and Processing: See table No. 7.2 |
| <b>Proposed Start dates of process execution</b>       | 1 January                                                                          |
| <b>Proposed end dates of process execution</b>         | 31 December                                                                        |
| <b>Frequency of update of data in the MONEVA.</b>      | Annual: C05081, C05082, C06091, C06092.1 & C08021                                  |

**Note: An electronic version of the forms that allows the users to enter and process data related to the same variables is also available. See Forms “C05081&C05082&C0821.xls**

**Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use. Example of the Maintenance log book for the variables C05081, C06091 & C08021 to record the resources used for each maintenance activity and their costs including repairs to illegal use. Table 7.1**

| Dates (from/to)                            |                            | 3/12/2014                                                  |                           | 3/15/2014   |                             |                               |                       |                                            |                  |
|--------------------------------------------|----------------------------|------------------------------------------------------------|---------------------------|-------------|-----------------------------|-------------------------------|-----------------------|--------------------------------------------|------------------|
| Consecutive number of maintenance activity |                            | 12                                                         |                           |             |                             |                               |                       |                                            |                  |
| Description of the maintenance activity    |                            | Repair of a broken cement hydrant and replacement of valve |                           |             |                             |                               |                       |                                            |                  |
| Is the maintenance related to illegal use  |                            | Yes                                                        | X                         | No          |                             |                               |                       |                                            |                  |
| Location of the activity                   |                            | Lateral 3 South, Turnout 15, Development Area 3            |                           |             |                             |                               |                       |                                            |                  |
| Description of Resources used              | WUAs staff                 |                                                            | Materials                 |             | Spare and replacement parts |                               | Hourly rate (JD/hour) | Unit cost of material or replacement parts | Cost of resource |
|                                            | Name of staff &/or machine | No. of hour worked                                         | Type of material and unit | Amount used | Type of replacement part    | No. of replacement parts used |                       |                                            |                  |
| <b>Staff 1</b>                             | Salam                      | 16                                                         |                           |             |                             |                               | 5                     |                                            | 80.00            |
| <b>Staff 2<sup>6</sup></b>                 | Abu Zeid                   | 4                                                          |                           |             |                             |                               | 5                     |                                            | 20.00            |
| <b>Worker 1</b>                            | labourer                   | 12                                                         |                           |             |                             |                               | 3                     |                                            | 36.00            |
| <b>Worker 2</b>                            | Technician                 | 4                                                          |                           |             |                             |                               | 5                     |                                            | 20.00            |
| <b>Machine 1</b>                           | Tractor 60 HP              | 2                                                          |                           |             |                             |                               | 20                    |                                            | 40.00            |
| <b>Machine 2</b>                           | Cement mixer               | 8                                                          |                           |             |                             |                               | 5                     |                                            | 40.00            |

**Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use .Example of the Maintenance log book for the variables C05081, C06091 & C08021 to record the resources used for each maintenance activity and their costs including repairs to illegal use. ( Table 7.1 Cont.)**

| Resources used                                                                      | WUAs staff                   |                    | Materials                                      |             | Spare and replacement parts |                               | Unit cost per hour (JD per hour) | Unit cost of material or replacement parts | Cost of resource |
|-------------------------------------------------------------------------------------|------------------------------|--------------------|------------------------------------------------|-------------|-----------------------------|-------------------------------|----------------------------------|--------------------------------------------|------------------|
|                                                                                     | Name of staff and or machine | No. of hour worked | Type of material and unit                      | Amount used | Type of replacement part    | No. of replacement parts used |                                  |                                            |                  |
| Material 2                                                                          |                              |                    | sand (1 sac of 30 kg)                          | 3           |                             |                               |                                  | 1                                          | 3.00             |
| Material 3                                                                          |                              |                    | Wood for scaffolding (pieces of 12* 60 *3 cm ) | 10          |                             |                               |                                  | 0.25                                       | 2.50             |
| Replacement part 1                                                                  |                              |                    |                                                |             | Valve Ø 4"                  | 1                             |                                  | 90                                         | 90.00            |
| Replacement part 2                                                                  |                              |                    |                                                |             | Flanges Ø 4"                | 2                             |                                  | 10                                         | 20.00            |
| <b>Total maintenance cost of activity No12 (Relevant to Variable C05081)</b>        |                              |                    |                                                |             |                             |                               |                                  |                                            | 353.50           |
| <b>Total direct maintenance cost of activity No12 (Relevant to Variable C06091)</b> |                              |                    |                                                |             |                             |                               |                                  |                                            | 253.5            |
| <b>Cost of repair if due to illegal abstractions (Relevant to Variable C08021)</b>  |                              |                    |                                                |             |                             |                               |                                  |                                            | 353.50           |

**Example 3: Variables C05081, C05082, C06091, C06092.1 Actual and budgeted total “maintenance costs” and “direct maintenance costs” and Variable C08021 Costs of repairs to illegal use . Example of Data entry and processing form of the summary of the recorded maintenance activities costs for the variables: C05081, C06091 & C08021 ( Table 7.2 )**

| Maintenance activity Number | Starting date | Ending date | Description of maintenance activity                        | Total Maintenance costs of activity (Variable C05081) | Total Direct <sup>11</sup> Maintenance costs of activity (Variable C06091) | Total Costs of repair due to illegal abstraction <sup>12</sup> (Variable C08021) |
|-----------------------------|---------------|-------------|------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1                           |               |             |                                                            |                                                       |                                                                            |                                                                                  |
| 2                           |               |             |                                                            |                                                       |                                                                            |                                                                                  |
| .....                       |               |             |                                                            |                                                       |                                                                            |                                                                                  |
| 12                          | 3/12/2014     | 3/15/2014   | Repair of a broken cement hydrant and replacement of valve | 353.5                                                 | 253.5                                                                      | 353.5                                                                            |
| Add activities as necessary |               |             |                                                            |                                                       |                                                                            |                                                                                  |
| .....                       |               |             |                                                            |                                                       |                                                                            |                                                                                  |
| <b>Total</b>                |               |             |                                                            | 353.5                                                 | 253.5                                                                      | 353.5                                                                            |



Thank you for your  
attention !



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