



A Report on the Workshop of "Open and accessible data platform on irrigation for Yemen"

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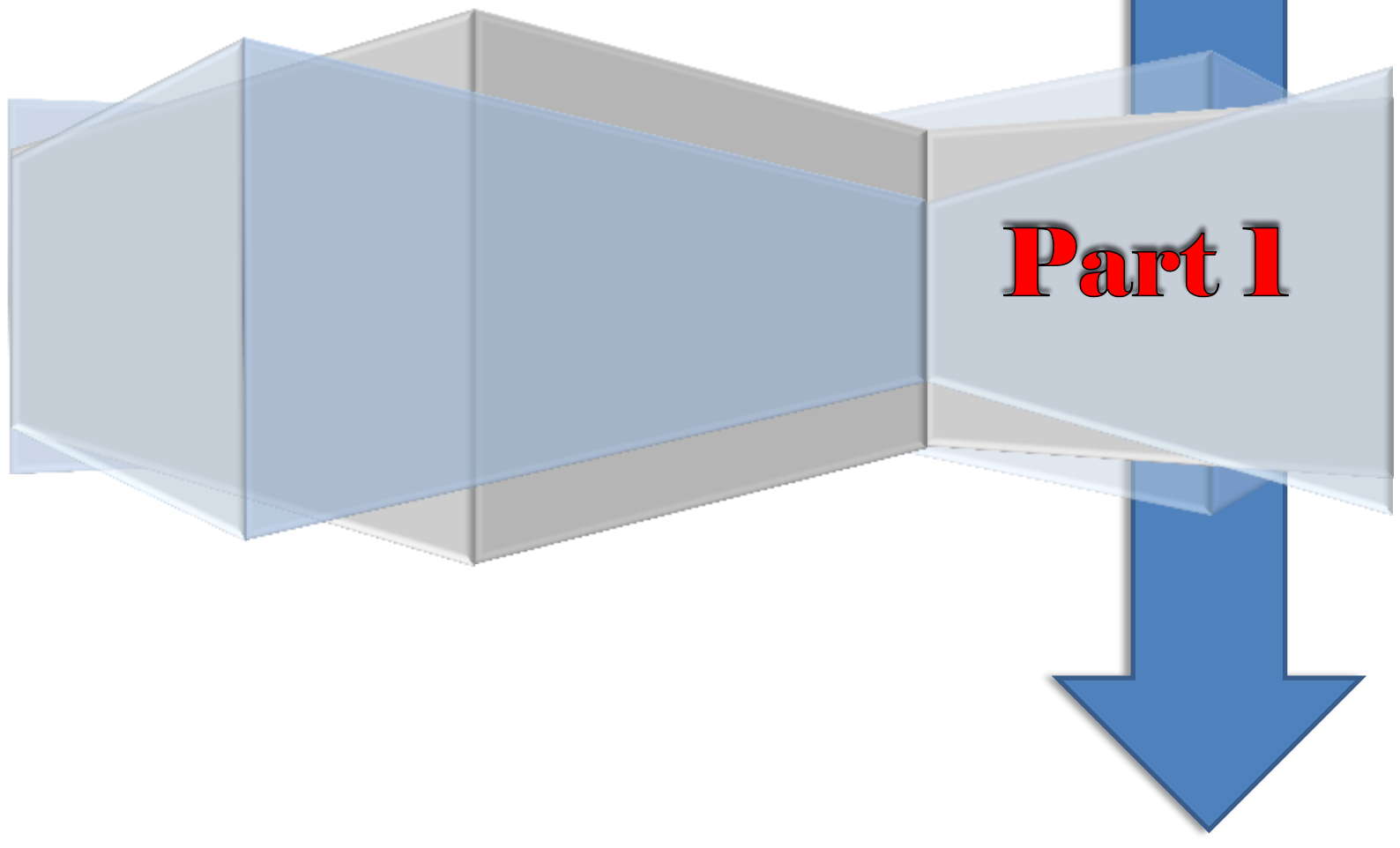
23 April 2014



**Open and accessible data platform on
irrigation for Yemen**

INTRODUCTION

Part I



1.1 Introduction

The Yemen Republic suffers from many problems in the field of natural resources. One of the most important crisis that the Republic is face it is the scarcity of water resources and the population growth. Also, the majority of the population depends on agriculture, and the majority of the cultivated land is irrigated. The renewable water resources are insufficient to meet the current water demand. To discuss possible solutions, the workshop (23-26 June 2013), jointly organized by FAO and the Embassy of the Kingdom of the Netherlands, had a particular emphasis on remote sensing and other new analytical tools. The result(s) from workshop revealed that the current datasets on crops and water resources in Yemen cannot be used as a base for future works and also they are incomplete and obsolete. Based on 13 recommendations supported by decision makers, planners and farmer organizations, the Government of Yemen has indicated to the Embassy of the Kingdom of The Netherlands the need to help them with preparing an updated assessment of the renewable water resources conditions and the irrigation statistics. The Netherlands Embassy in Yemen has articulated that they are willing to technically and financially support the Yemeni institutions with the planning of water resources.

This project is the result of the workshop held in Sana'a from 23 to 26 June (2013) at the Embassy of the Netherlands (EKN), where the latest tools for quantifying water resources in Yemen have been discussed. The new technique based on RS data is a promising technique for large scale monitoring of water resources management. The objective of the project is the development of an accessible, cloud-based irrigation platform that facilitates short and long-term irrigation planning in Yemen. The project is a Dutch – Yemeni collaboration and the partners are Alterra, Wageningen University and Research Centre (coordinator), eLEAF, Hydro Yemen, Hydrologic Systems BV, and The Water & Environment Center – Sana'a University. The project duration is from November 2013 to October 2017. This project has received a grant from the Embassy of the Netherlands.

1.2 Organizing the first Workshop in Yemen

The workshop has been organized to identify the user requirements. Alterra and The University Water & Environment Center – Sana'a University (WEC-SU) will be responsible for organizing the current workshop (23 April 2014). For the organization of the workshops WEC will take the leading role, supported by the other consortium partners to deliver specialist training during the workshops.

The workshop has been organized for one day with the stakeholders (end users) to identify the user requirements, while the preparation of this workshop consumed more than 10 days. A number of about 80-90 participants have been invited. A demonstration of the platform has been given by Hydrologic, and possible options for the apps for Yemen have been explained and discussed during the workshop activity. A form and check list has been prepared and distributed to be used for the user needs assessment in Yemen. The participants represent of different trends of the Yemeni water sector, including decision makers and researchers as well as farmer representatives. The outcome of the workshop in Yemen will be a list of user needs for the irrigation platform, with specifications of the interface, viewers and the Apps.

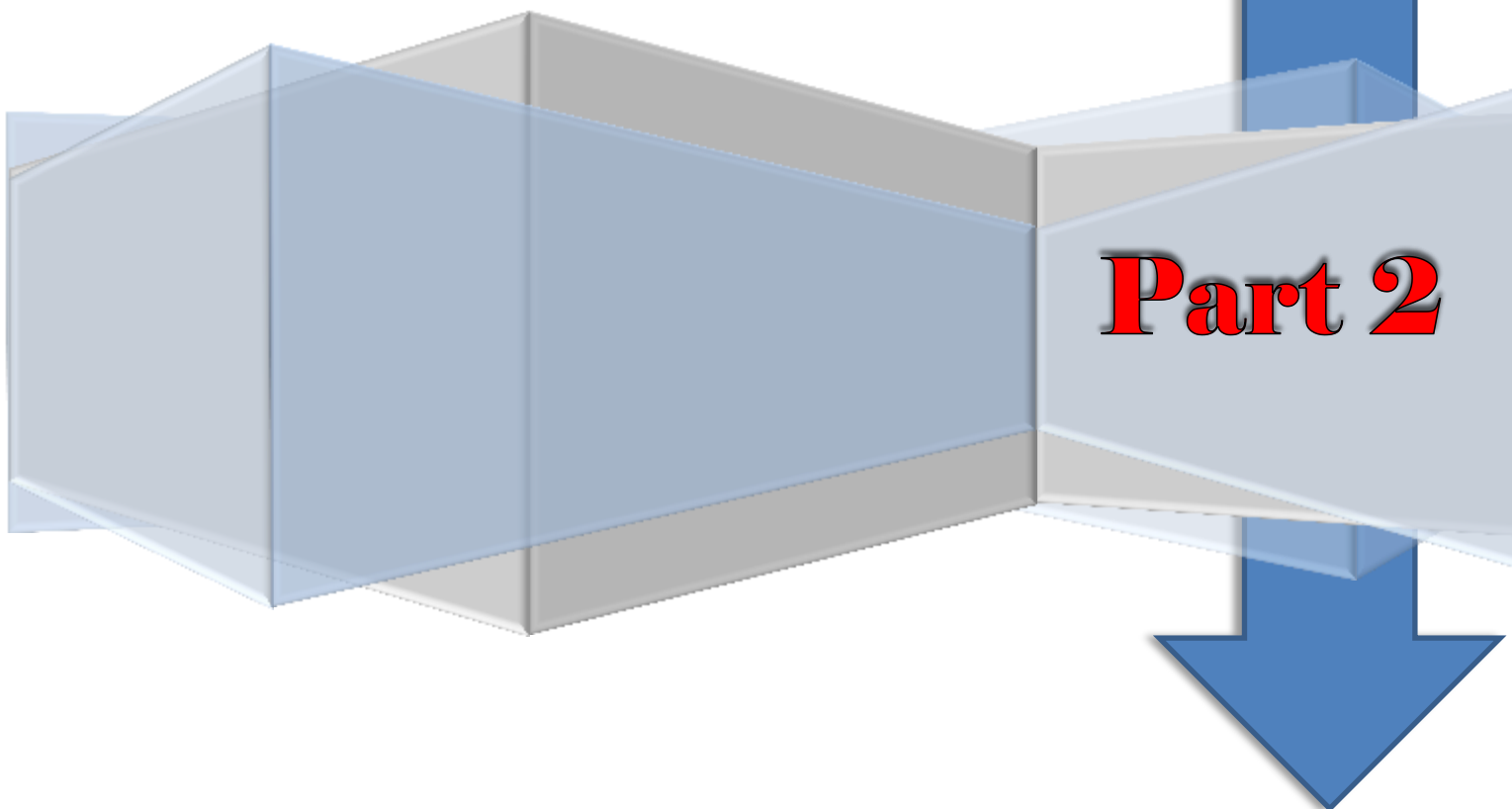
1.3 Benefits of the Workshop

This 1st workshop on using the Remote Sensing technique in the field of irrigation, which held in Sana'a, Yemen in 23 April 2014, will address the current status of user's need and understanding the main problems in data gap that the users and the organizations in Yemen face it. This workshop will be an opportunity among various participants of different angles to communicate between each other and discuss the major problems and requirement of data and solutions as well. These activities will focus on major problems in the field of irrigation and water depletion in Yemen and hence finding good solutions and available applications for the society, especially the farmers.

**Open and accessible data
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Workshop Preparation

Part 2



2.1 Workshop Programs

The workshop held in one day at WEC, Sana'a, attended by about 80 participants of decision makers, researchers, post graduate students, engineers, as well as farmers in water and agriculture sectors. The workshop organized into three parts (**Table 2.1**). The first part included the speeches of WEC's director, the Ambassador of EKN, and the Sana'a University Rector. The second part of the workshop activity included the demonstration of the elements of the project achieved by Prof. Abdulla Babaqi and Dr. Tarek Al-Hibshi. The third part, branched into two parts. The first part involved separating the participants into three main groups, which are the Academic group, Farmers group, and the water/agriculture group (the larger one). The second part included discussion all the output of the interactive session with the WEC's director and this staff. The following paragraphs illustrate the workshop program activities as follows:

2.1.1 Part 1: Invitees speeches

The workshop started by words of welcome from the director of WEC (Prof. Abdulla Babaqi), then the works of excellency ambassador of EKN, which focused the light on the water scarcity problem in Yemen and how to manage it in general. Later, the rector of Sana'a university Prof. Abdulhakim Al-Sharjaby highlighted on the water issues and the challenges that Yemen face it in the current time and in the future and the benefit of using the new techniques to mitigate the effects of these problems in our Yemeni society.

2.1.2 Part 2: Invitees speeches

The second part of the workshop activity focused on the objectives of workshop and the benefits of the RS project. The objectives discussed in the workshop are:

1. To explain the project activities
2. To identify the current data gaps in (irrigation) water resources management
3. To discuss the potential users of the data platform that the project will build

4. To agree on possible solutions from the project (data applications)

These points have been focused and illustrated by Prof. Abdulla Babaqi and Dr. Tarek Al-Hibshi.

Table 2.1: The workshop program.

Time	Activity
09:30-09:40	Welcome by WEC Director
09:40-09:55	Opening by the Ambassador of the Kingdom of the Netherlands
09:55-10:05	Speech of SU Rector
10:05-10:35	Introduction of the project by Prof.Abdulla Babaqi and Dr.Tarek Al-Hibshi
10:35-10:45	Questions
10:45-11:15	coffee break
11:15-12:45	User needs assessment, interactive session:
12:45-13:00	Closure

2.1.3 Part 3: Invitees speeches

The second part of the workshop activity focused on the user needs assessment. Thus has been done by classifying the participants into three groups, Academic group, Farmers group, and Water/Agriculture group).

The second division of part 3, involved discussing the results and the recommendations. The material that were used in the interactive session have been collected and stored and saved at the WEC's secretary.

2.2 Media

During the workshop, the activities of the whole participants have been recorded by camera video as well by digital camera, in order to record and archive the activities.

2.3 Materials

In order to achieve the workshop, three power point slides have been prepared in Netherlands (NL) and refined in WEC and used later for presenting and demonstrating the remote sensing background, the development of a platform with key data for irrigation in Yemen, and the benefits from this project in general. Later on, an English version questionnaire has been used through the workshop. The English version has been translated into Arabic version. Both versions have been modified and arranged to be suitable for the participants to fill it as possible as they can (**Figs. 2.1 & 2.2**). An additional page has been added and distributed through the participants. The page include the name and organization information of the participant and a dialog box for writing question(s) or inquiries. Later, these individual pages have been gathered with the questionnaires and preserved in the secretary of WEC for later analysis, evaluating, documenting and archiving as well.

Fig. 2.1: Modified English version questionnaire.

Short questionnaire for the project “Open and accessible data platform on irrigation for Yemen” (2 pages)

Please fill in the questionnaire and bring it with you to the workshop on April 23, 2014. The information provided in this section remains confidential and will not be disclosed to third parties. The information will be used to further guide the data application development in the project.

General information

1. Age, please tick: <30 ; 30-45 ; 45-54; 55-64; >65
2. Gender Male Female
3. Name and type of organization, please tick:
 - Public, name of organisation:
 - Private, name of organisation:
 - NGO, name of organisation:
 - University / knowledge institute/ research, name of organisation:
 - Local / regional / national involvement, name of organisation:
 - Other, name of organisation:
4. What is your current position? Please tick:
 - Decision maker
 - Academic
 - Management
 - Technical
 - Research
 - Other, being

Assessment of current status

1. Describe your current main challenges as specific as possible?

2. What are currently your main data sources (data type, source). What is your satisfaction with these?

Data requirements from users

1. What are the most important information/data gaps to perform your tasks? Please indicate in the table below for each type "YES" or "NO".

Information type	Data currently needed Indicate "YES"/"NO"	Data missing or not Indicate "YES"/"NO"	Needed on a data portal Indicate "YES"/"NO"
Meteorological data: Air temperature, relative humidity, wind speed			
Meteorological data: Solar radiation			
Meteorological data: Rainfall			
Water consumption (actual, potential and reference evapotranspiration)			
Topographic maps			
Digital Elevation Model (DEM)			
Soil type			
Land cover / crop type			
Irrigated area			
Satellite images			
Other....			

2. Could you please indicate for the missing information, how would you like to receive this information?

Missing information or data in (irrigation) water management	How would you like to receive the information? Please indicate as e.g. raw data, maps, tables, summary reports, and how often are updates needed, semi-real time data or historical records
1.	
2.	
3.	
4.	

5. Answer the following questions as possible?

1. What is the point view of your site on using the RS applications in your works?	-Very important - Important - Not important
2. Does your site has the facilities to use the RS techniques?	- Available - Some of them - Not available
3. Does your site need a training on RS applications?	- Yes - No
4. Does your site need equipment and software?	- Yes - No
5. What type of data do you have?	- Digital maps - Satellite images - Field survey - All of them - Nothing of them
6. What is you source of data?	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.
7. Do you thing that your site needs a specific data? Determine.	- No, it doesn't need - Yes, it needs (like): - 1. - 2. - 3. - 4. - 5. - 6.
8. Are you satisfy on your data?	

Fig. 2.2: Translated and modified Arabic version questionnaire.**Short questionnaire for the project “Open and accessible data platform on irrigation for Yemen” (2 pages)**

الاستبيان المختصر لمشروع "الصرح المفتوح للبيانات المتاحة على الري في اليمن" (صفحتين)

Please fill in the questionnaire and bring it with you to the workshop on April 23, 2014. The information provided in this section remains confidential and will not be disclosed to third parties. The information will be used to further guide the data application development in the project.

يرجى تعبئة الاستبيان و إحضاره معكم الى الندوة التي ستقام بتاريخ ٢٣ ابريل ٢٠١٤. المعلومات المتضمنة في هذا الاستبيان ستكون سرية و لن تعطى الى أي طرف ثالث. هذه المعلومات سوف تستخدم كدليل في تطوير تطبيقات المشروع.

معلومات عامة

٥. Age(العمر) ، أشر في المربع: أكبر من 55- □ ; 45-54 □ ; 30-45 □ ; أصغر من 30 □ :

64; □ 65

٦. الجنس : ذكر () - أنثى ()

٧. أشر على الإسم واكتب اسم الجهة:

- () قطاع عام ، اسم الجهة.....
- () قطاع خاص ، اسم الجهة.....
- () قطاع غير حكومي ، اسم الجهة.....
- () جامعة / معهد / بحوث ، اسم الجهة.....
- () ارتباط محلي / إقليمي / وطني ، اسم الجهة.....
- () أخرى ، اسم الجهة.....

٤. أشر على موقعك الحالي في جهتك:

- () متخذ قرار
- () أكاديمي
- () إداري
- () فني
- () باحث
- () عضو جمعية مستخدمي المياه
- () مزارع
- () أخرى

تقييم الوضع الحالي

6. Answer the following questions as possible?

٥. أجب عن الأسئلة التالية بقدر الإمكان:

١. ما هي رؤية جهتكم من حيث استخدام تقنيات الإستشعار عن بعد في مجال عملكم	- موضوع ملح و مهم للغاية - مهم - غير مهم
٢. هل تمتلك جهة عملكم الإمكانيات من حيث توفر الأجهزة/ الكادر المؤهل / البرامج التخصصية	- متوفرة - بعض منها - غير متوفرة
٣. هل تحتاج جهة عملكم الى تدريب؟	- نعم - لا
٤. هل تحتاج جهة عملكم الى أجهزة و برامج و بيانات	- نعم - لا
٥. ما هي البيانات المتوفرة معكم؟	- خرائط رقمية - صور أقمار صناعية - بيانات حقاية (مناخية / مياه / تربة / سكانية ... الخ) - جميعها - لا شيء
٦. ماهي المصادر الرئيسية لمعلوماتك الحالية (حدد)	١. ٢. ٣. ٤. ٥. ٦. ٧. ٨. ٩. ١٠.
٧. هل ترى ان جهتكم بحاجة الى بيانات خاصة؟ حدد نوع البيانات	- لا ليست بحاجة الى بيانات - نعم بحاجة الى بيانات مثل: ١. ٢. ٣. ٤. ٥. ٦.
٨. ما مدى رضاكم عن بياناتكم و معلوماتكم؟	

Data requirements from users المعلومات المطلوبة من المستخدمين:

٦. ما هي المعلومات الأكثر اهمية لإنجاز مهامك؟ و ما هي المعلومات الناقصة لإنجاز تلك المهام؟ برجاء توضيح ذلك لكلمة نعم أو لا في الجدول التالي:

6. What are the most important information/data gaps to perform your tasks? Please indicate in the table below for each type “YES” or “NO”.

Information type : نوع المعلومة	Data currently needed نوع البيانات المحتاجة حالياً (نعم / لا)	Data missing or not بيانات ناقصة أو غير ناقصة (نعم / لا)	Needed on a data portal الاحتياجات لمستودع البيانات (نعم / لا)
Satellite images			
Meteorological data: Air temperature, relative humidity, wind speed بيانات مناخية: - درجة حرارة الجو - الرطوبة النسبية - سرعة الرياح			
Meteorological data: Solar radiation بيانات مناخية: - الإشعاع الحراري			
Meteorological data: Rainfall بيانات مناخية: - الهطول المطري			
Water consumption (actual, potential and reference evapotranspiration) الإستهلاك المائي: (الحقيقي / المحتمل / البخرنتح المرجعي)			
Topographic maps خرائط طبوغرافية			
Digital Elevation Model (DEM) خرائط الارتفاعات الرقمية			
Soil type نوع التربة			
Land cover / crop type غطاء الأرض / نوع المحصول			
Irrigated area المساحة المروية			
Other.... أخرى			

7. Could you please indicate for the missing information, how would you like to receive this information?

يرجى وضع المعلومات الناقصة ، وكيف ممكن ان تحصل على هذه المعلومات ؟

<p>Missing information or data in (irrigation) water management البيانات او المعلومات الناقصة لإدارة مياه الري</p>	<p>How would you like to receive the information? Please indicate as e.g. raw data, maps, tables, summary reports, and how often are updates needed, semi-real time data or historical records كيف يمكن أن تحصل على المعلومات برجى التوضيح: بيانات اولية، خرائط، جداول، تقارير مختصرة، وكيف غالبا تحدث الإحتياجات، إحتياجات شبة حقيقة ، سجلات تاريخية</p>
1.	
2.	
3.	
4.	

1. Lectures – Introduction on the RS project
2. Questionnaire – for the participants
3. Discussion – interactive session

The methodology used in the workshop is show in **Fig. 2.4**. In general, the workshop focused on linking the ideas and the information between the participants as possible as it can with easy ways (**Fig. 2.4**).

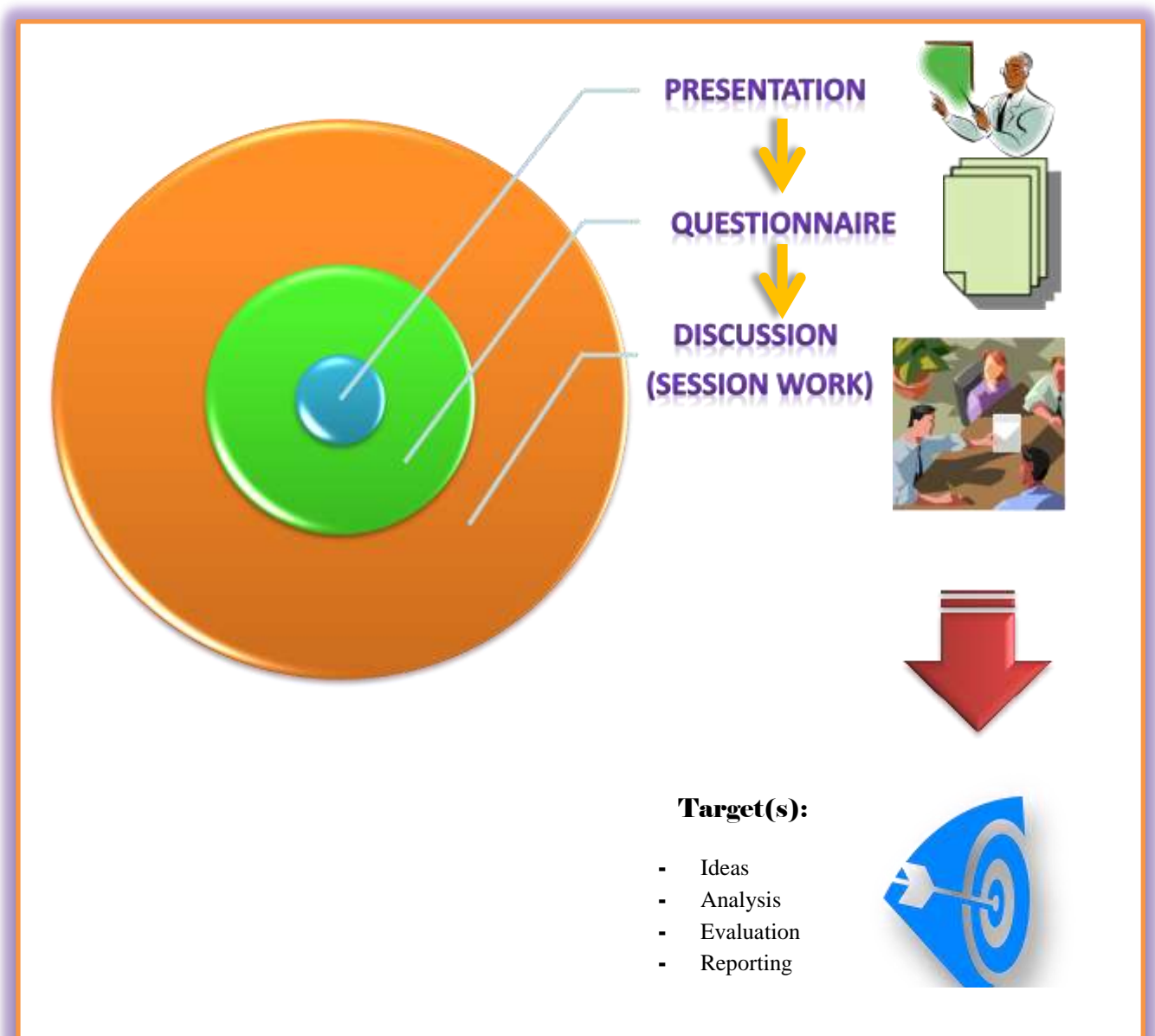
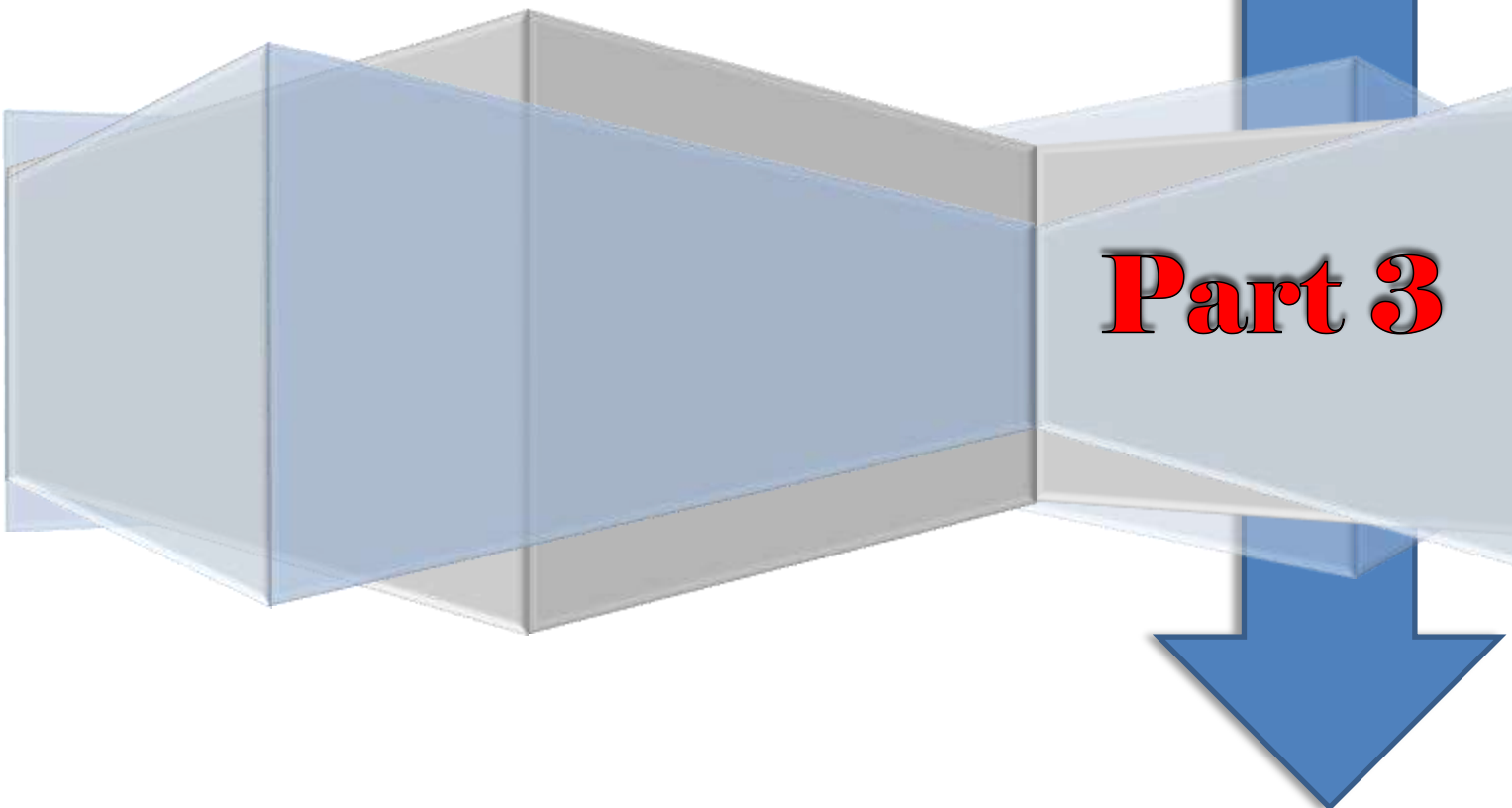


Fig. 2.4: Depicts the methodology applied in the workshop.

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Workshop Activities

Part 3



3.1 Workshop Activities

The workshop activities included three main trends. The first one involved the talking of Director of WEC, the ambassador of EKN, and later the rector of Sana'a University. Thus, the workshop started by words of welcome from the director of WEC (Prof. Abdulla Babaqi), then the majesty ambassador of EKN focused the light on the water scarcity problem in Yemen and how to manage it in general. Later, the rector of Sana'a university Prof. Abdulhakim Al-Sharjaby, addressed the main water problems and the challenges that Yemen will face it in the future and the ways to mitigate the effects of the water scarcity on the Yemen society (Fig. 3.1).

The second activity lunched by Prof. Babagi (Director of WEC) and Dr. Tarek Al-Hibshi (Director of RS/GIS Interpretation Unit), which presented and demonstrated tasks and targets of the projects, the partners, the benefits of the project, and the RS concepts background.

The third activity has been established after the coffee break and included the interactive session. The participants classified into three groups distributed into three separated places for discussing the water and agriculture issues as well as the user needs assessment. Finally, all the recommendations of the three groups have been collected and discussed with the director and the staff of WEC. These final results and recommendations have been documented and archived at WEC's secretary. In addition to that, the whole workshop activities have been recorded by different media and stored at WEC's secretary.



Fig. 3.1: 1) The participants with the Director of WEC, the Rector of Sana'a University, and the Ambassador of EKN with the First Secretary Water & Environment at EKN; 2) The word of Director of WEC; 3) The word of the Ambassador of EKN; 4) Finally, the word of Rector of SU.

3.2 The Interactive Session

Before establishing the interactive session between the participants, three lectures have been done by both Prof. Babaqi and Dr. Al-Hibshi, which explained the elements and the benefits of the RS project (Fig. 3.2). These lectures focused on the ways to reach the concepts of the RS techniques to the people, especially the farmers. After the lectures, the participants have been classified into three main groups; The Academic Group, The farmer Group, and The Water/Agriculture Group. The three group have been distributed through the WEC center.



Fig. 3.2: The lectures held by Prof. Babaqi and Dr. Al-Hibshi on the RS project.

3.3 The Academic Interactive Session

This group included academic, researchers, and post graduate students mostly in the field of water field or GIS/RS field. The results of the discussion have reviewed by the academic group and then listed as points for later discussion with the other groups and the WEC 's staff (**Fig. 3.3**).



Fig. 3.3: An interactive session held by the academic group.

3.4 The Farmers Interactive Session

The interactive session of the farmers group is shown in **Fig. 3.4**. The farmers group included some academic persons for helping and supporting them for listing their points and recommendations



Fig. 3.4: An interactive session held by the farmers group.

3.5 The Water/Agriculture Interactive Session

The last group included the interactive session of the water/agriculture group as shown in **Fig. 3.5**. The water/agriculture group included participants of different levels and included some academic staff of WEC as well.



Fig. 3.5: An interactive session held by the water/agriculture group.

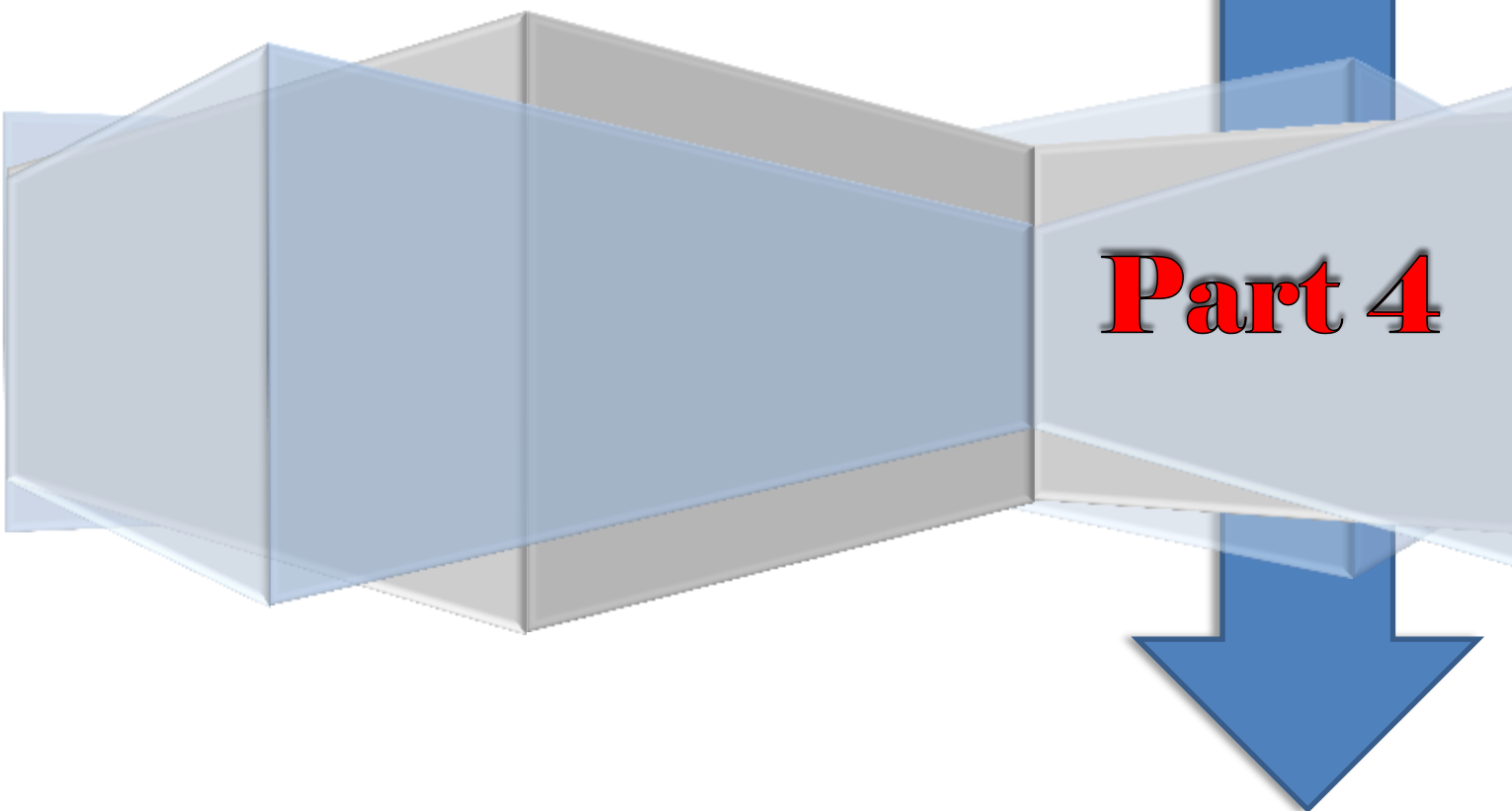
3.6 The final Interactive Session

At the end of the interactive session of the workshop, the participants have been discussed the whole points and recommendations raised during these sessions with the Director and the staff of WEC as well (**Fig. 3.6**).

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Results & Recommendations

Part 4



4.1 Questionnaire

Based on the interactive sessions that held between the different groups (Academic, Farmers, and Water/Agriculture Groups), the general results and points that raised through the discussion between these groups are summarized below. The participants were mostly focused on many issues based on the points of the questionnaire, while some other issues have been touched on problems that they are suffering from them.

4.2 Trends

Upon the discussions between the participants, the major points that raised from the interactive sessions can be summarized into three major trends as follows:

- Capacity building & instruments requirement
- Data available and sustainability
- Solutions & warning system
- Management, planning & cooperation

The detailed points of discussion are listed below and categorized based on the three group discussion. The question points of the questionnaire have been represented into histogram percentage to clarify the main trends of the answers and the major issues that the participants are concerned and/or worry about it.

The next pages are classified into two parts. The first part exhibits the issues and points that revealed through the interactive sessions, while the second part shows the statistical histogram of the answers in percentage of the questionnaires.

PART 1

Interactive sessions

Group 1

- Academic session

Group 2

- Farmer session

Group 3

- Water/Agriculture session

**Group 1****• Academic session****Point 1**

- Early warning

Point 2

- Dams constructions

Point 3

- Data available

Point 4

- Random irrigation / Random drilling

Point 5

- Capacity building

Point 6

- Desertification & environmental problems

Necessary requirement



Group 2

- **Farmers session**

Summary of the requirement and recommendations**Point 1**

- flood observation and quantities

Point 2

- Times of frost

Point 3

- Determining the water depletion levels in the basins

Point 4

- Determining the catchment boundaries

Point 5

- Average of water infiltration in the soil

Point 6

- Determining the natural pastures

Point 7

- Determining the suitable time for farming

Point 8

- determining the agricultural areas for one type of special crop

Point 9

- Warning & determining the locations attacked by agricultural diseases

Point 10

- Recognizing the motion of locust swarm

Point 11

- Determining the suitable time for irrigation and the need of water

Point 12

- Determining the wind speed /direction & their effects on plants

Point 13

- Using maps, aerial photos, and images for solving the disputes

Point 14

- Determining the crop need of fertilizer & herbicide

Point 15

- Develop maps for project requirement and minimizing of agricultural diseases

Point 16

- Determining the suitable agricultural species for each area based on the climate

Point 17

- Determining the soil type and their suitability for cropping

Point 18

- Determining the cultivated areas for one type of crop through a certain season and their economic benefit of cultivating the same crop

Point 19

- Determining the cases of permeation broken of random drilling

Necessary requirement

1

Developing database for evaluating the water conditions periodically

2

Training the farmers on these techniques

3

Requirement of devices for data collection with maps

Inquiries

1

What is the mechanism for reaching the information to the farmer?

2

Are there any extra cost to get these information?

3

Are these information will be available for all the farmers or restricted for some of them?

Group 3

• Water/Agriculture session**Summary of the requirement and recommendations****Point 1**

- Need of free data and information, free software, and images

Point 2

- Classifying Yemen on the base of basins

Point 3

- Studying the basins of Yemen

Point 4

- Need data of hazards, the cultivated and noncultivated areas and types, and surface and groundwater

Point 5

- Water consumption, Crop types, wadis erosion, fall and crash of water amphitheaters data

Point 6

- Need data on climate, water depletion levels

Point 7

- Early warning system for floods

Point 8

- Need data and information for the farmers and to be available for them

Point 9

- Linking the different project trends to each other and to be available for the people

Point 10

- Storing satellite images and rainfall data for comparison studies

Point 11

- Linking the different organizations with each others for data integral

Point 12

- Training and sustainability of the project

Point 13

- Linking between water used at the water sanitation

Necessary requirement

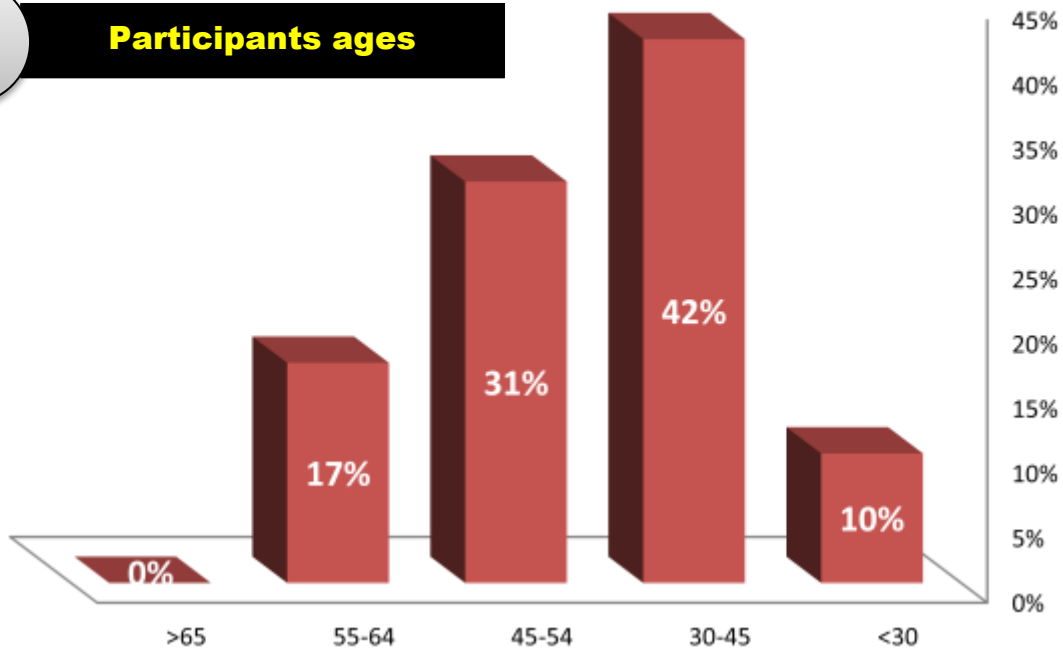
- 1 Data related to ground water levels, cultivated areas, water consumption, crop types
- 2 Land erosion, climate data
- 3 Sustainability of the project and training
- 4 Coordinating between the partners
- 5 Determining the water quantities for irrigation
- 6 Supporting the project by the governments

PART 2

Questionnaire

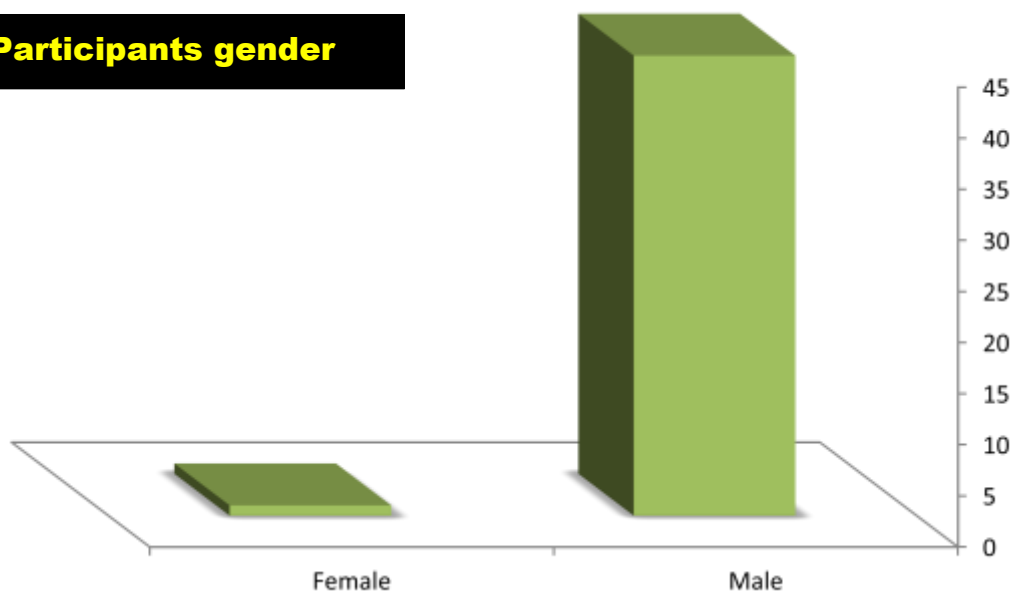
1

Participants ages

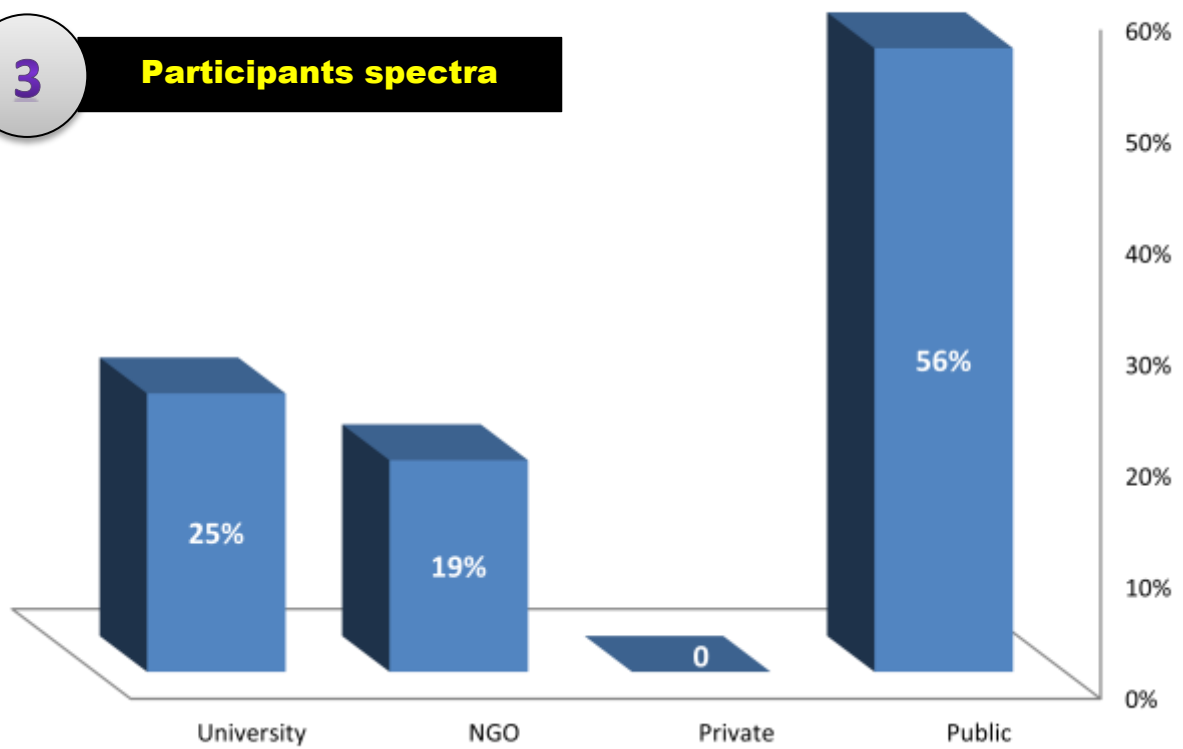


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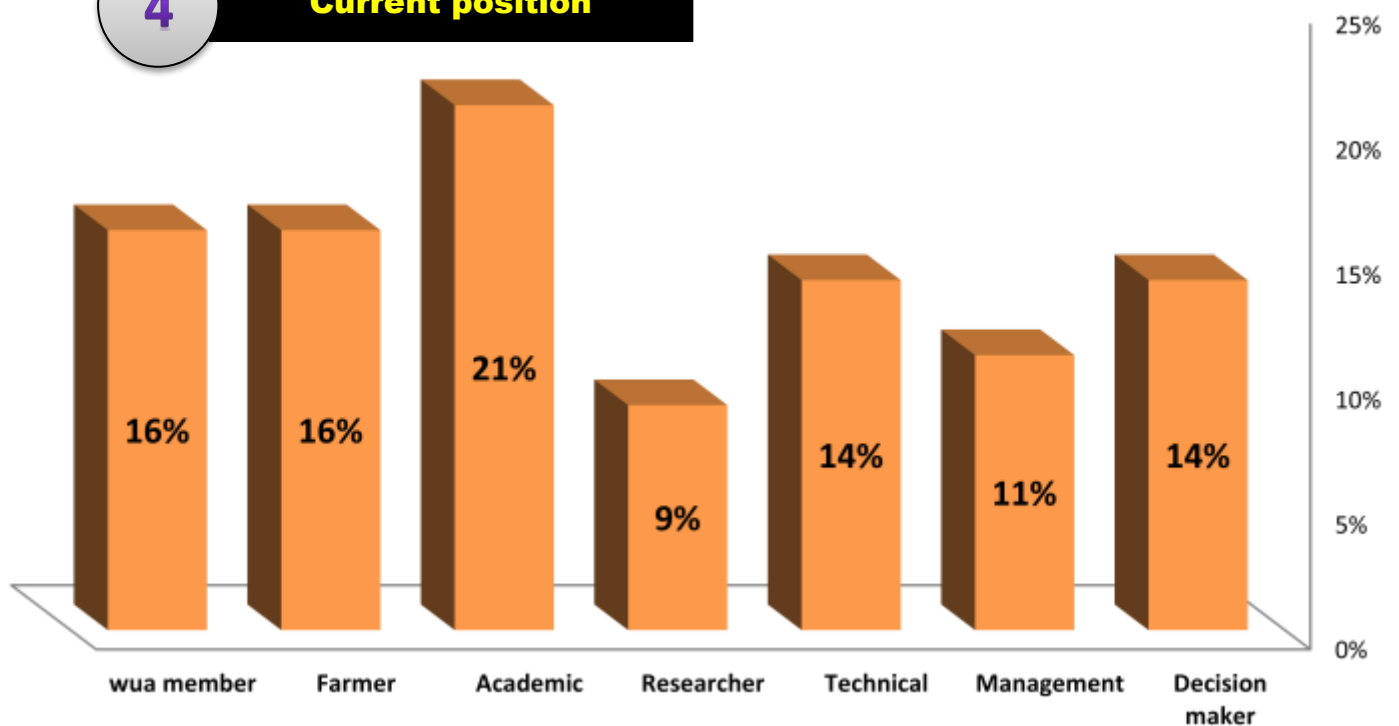
Participants gender



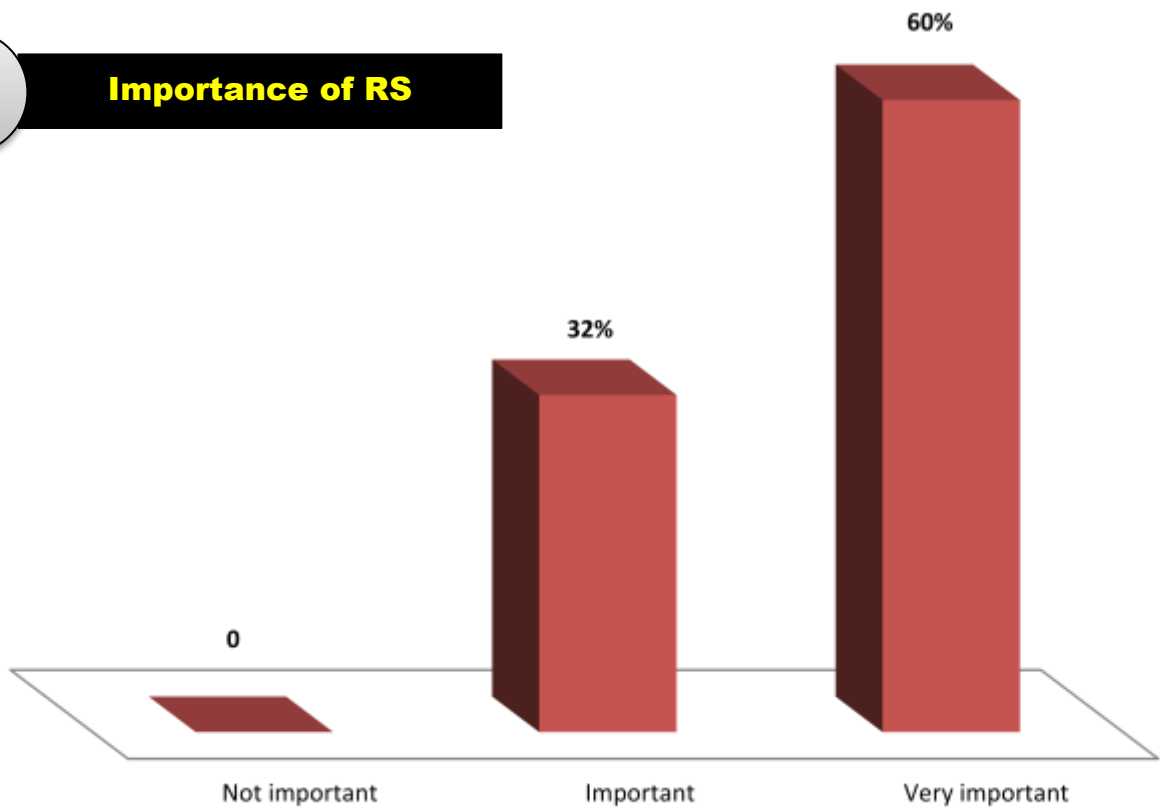
3

Participants spectra

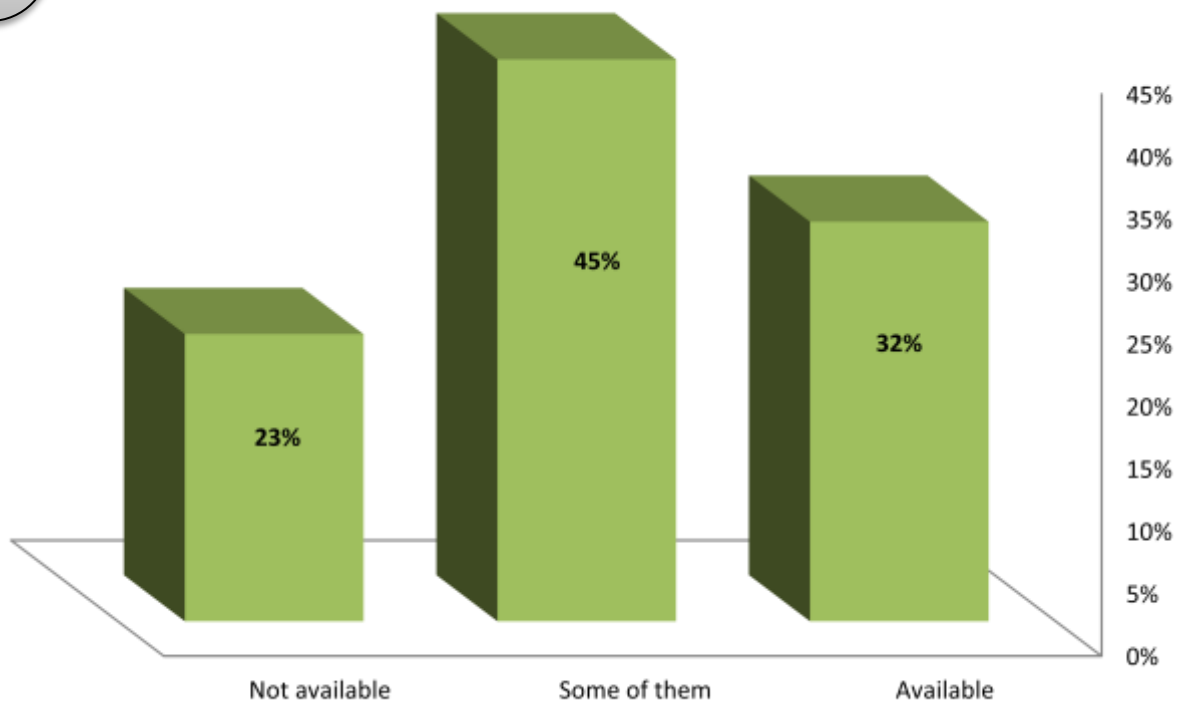
4

Current position

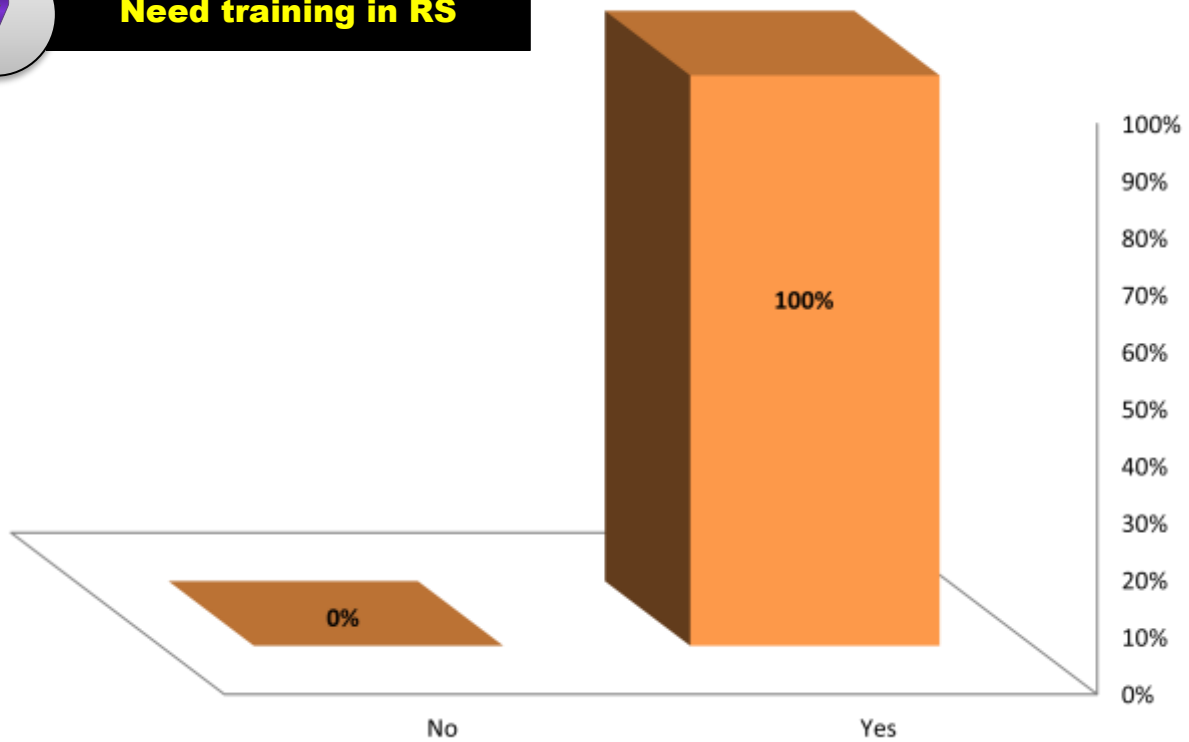
5

Importance of RS

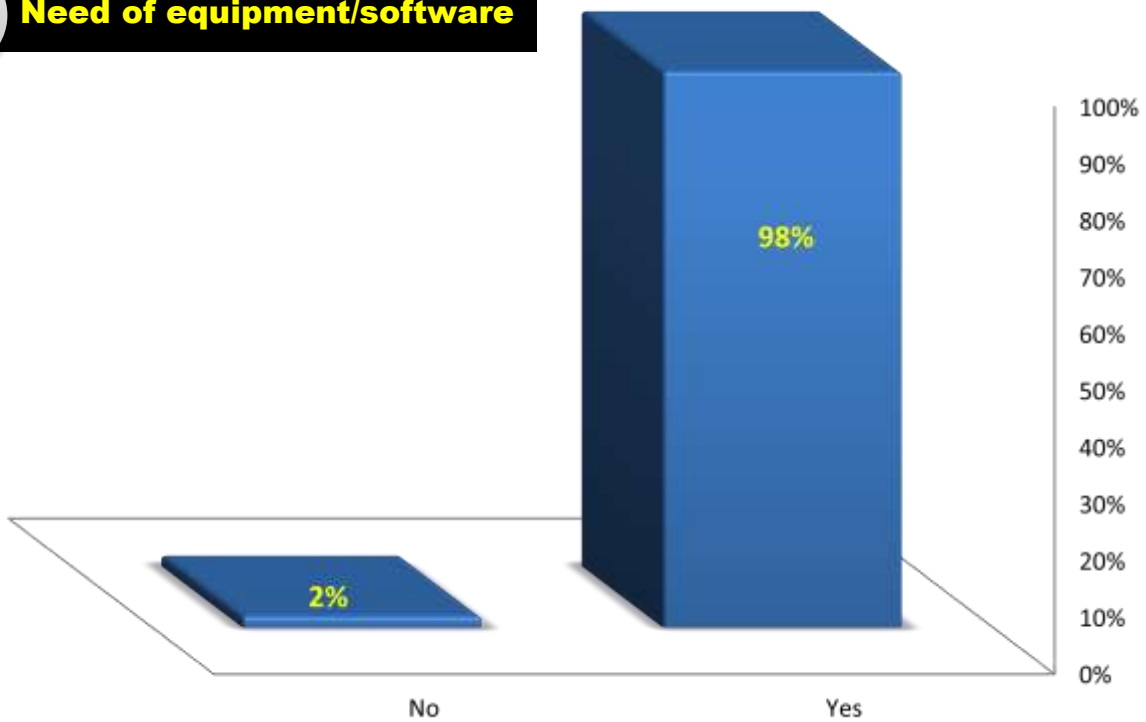
6

Available facilities

7

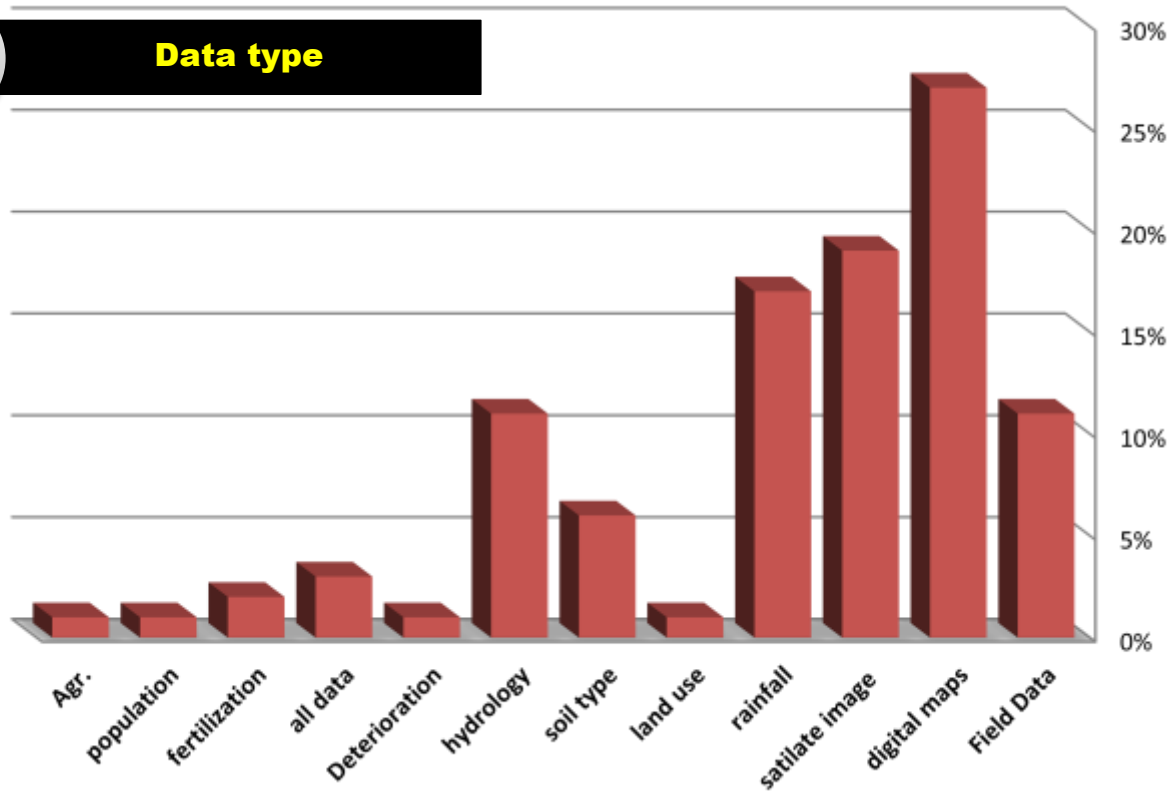
Need training in RS

8

Need of equipment/software

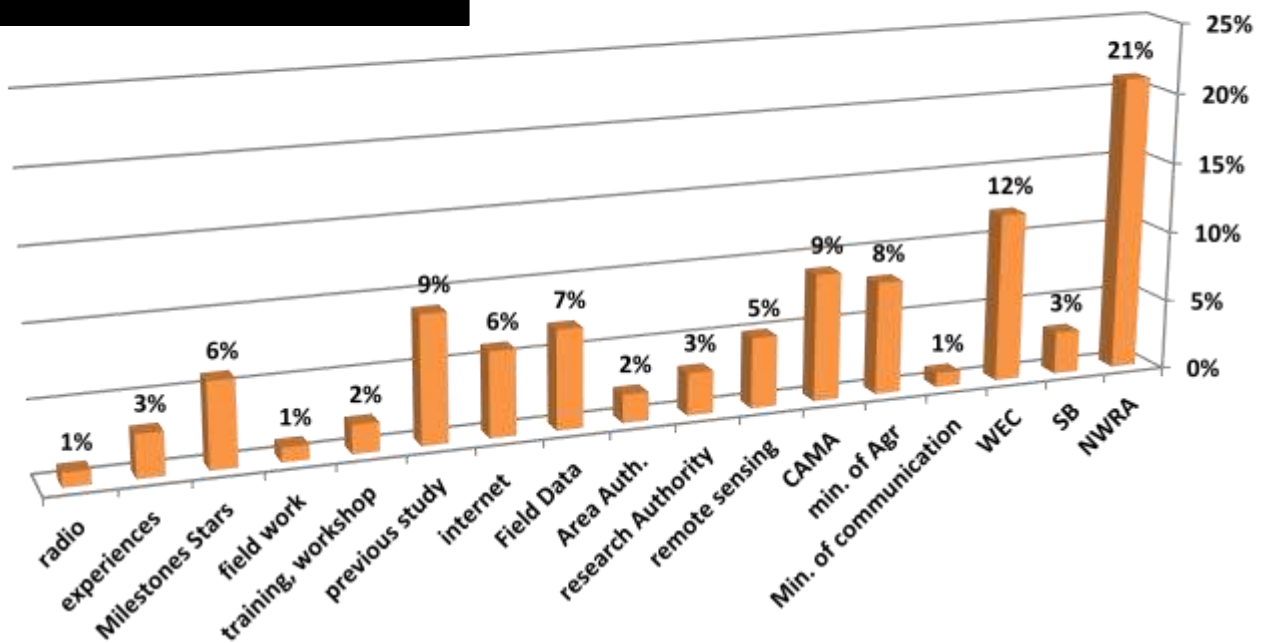
9

Data type



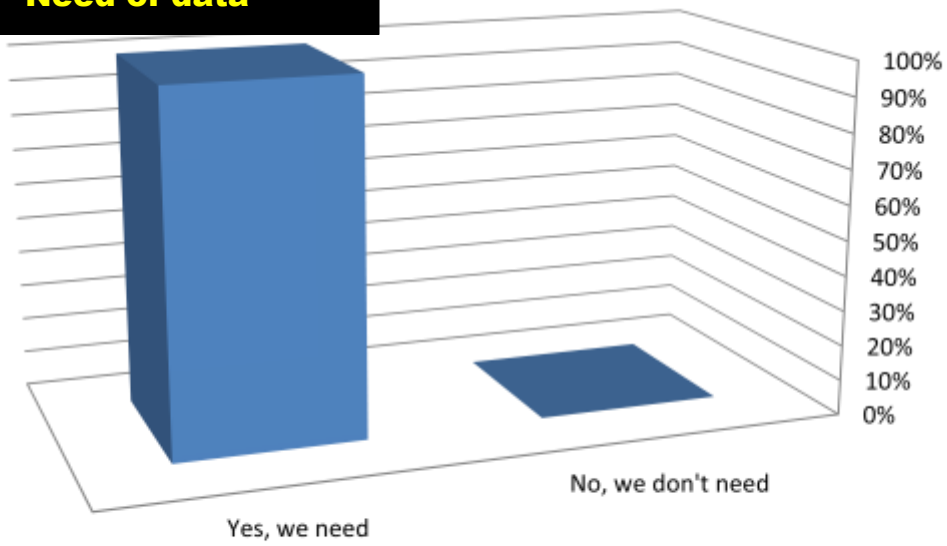
10

Source of data



11

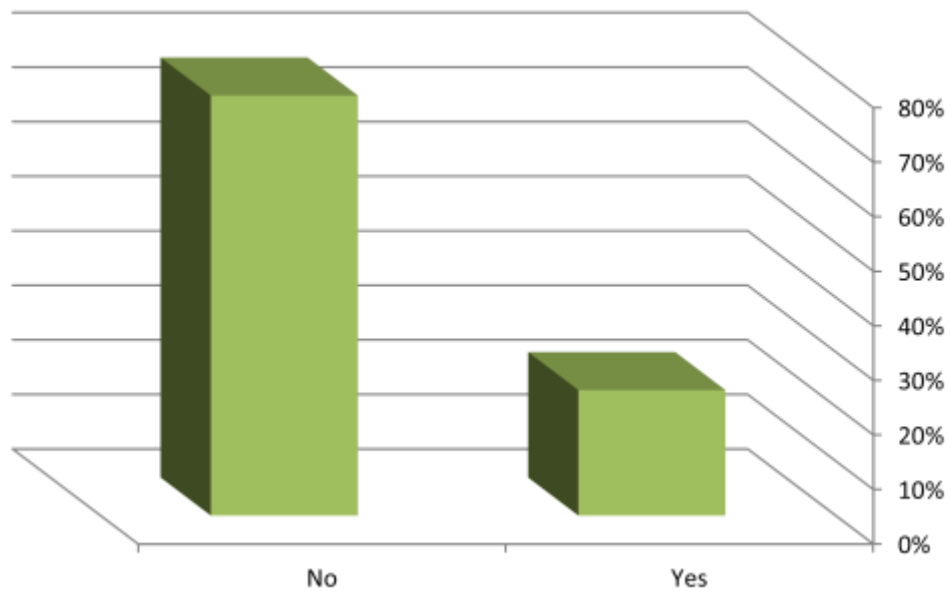
Need of data



	Yes, we need	No, we don't need
Series1	100%	0%

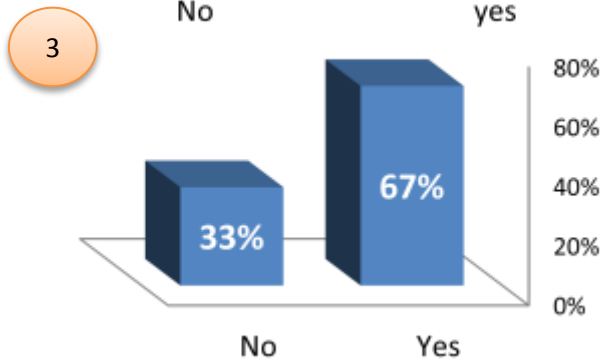
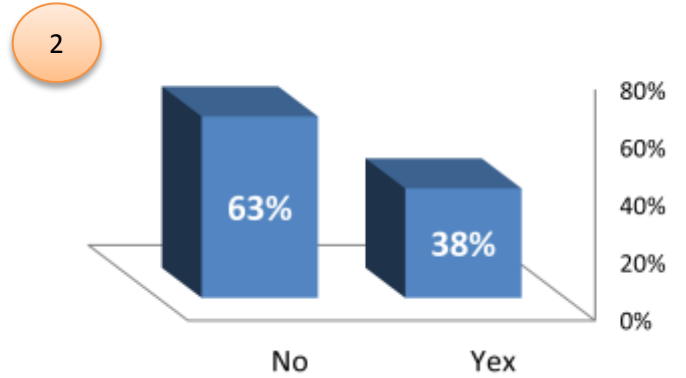
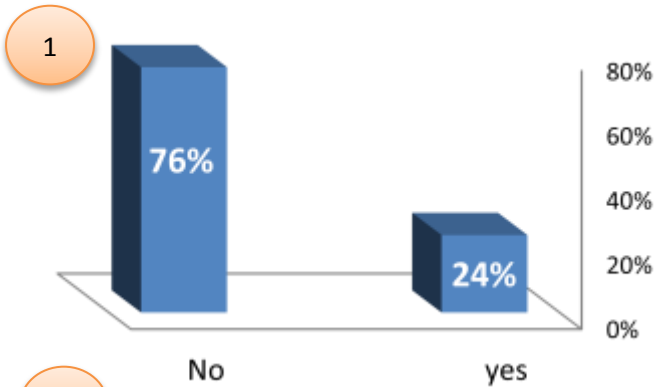
12

Are you satisfy on your data



13

Meteorological data: Air temp, RH, Wind speed



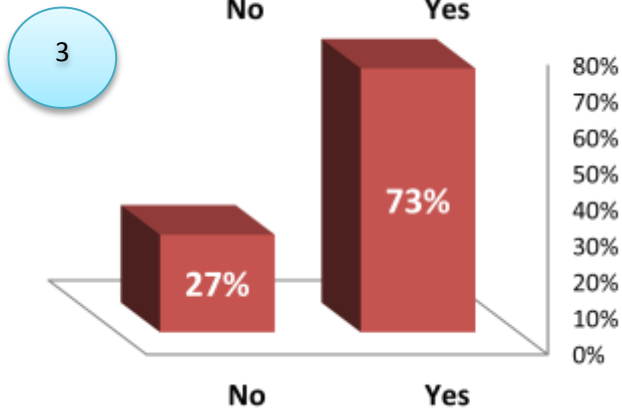
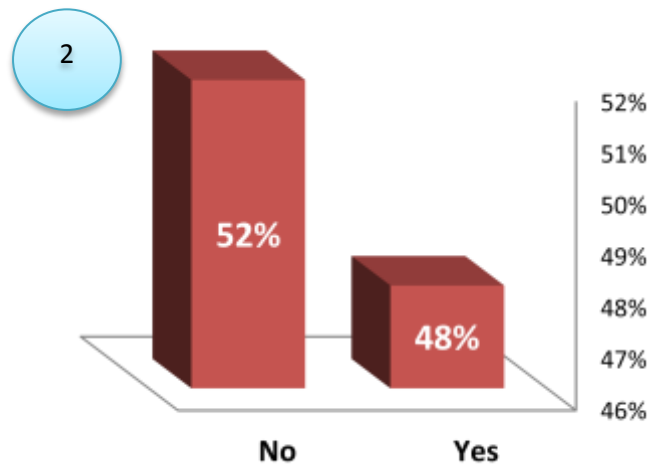
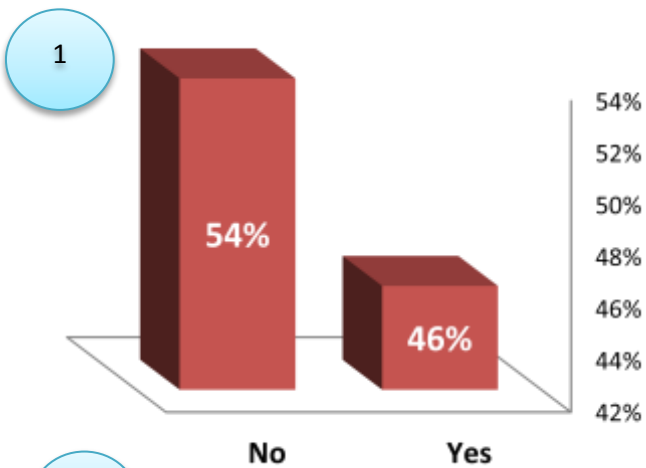
1: Needed on a data portal Indicate

2: Data missing or not Indicate

3: Data currently needed Indicate

14

Meteorological data: Solar radiation



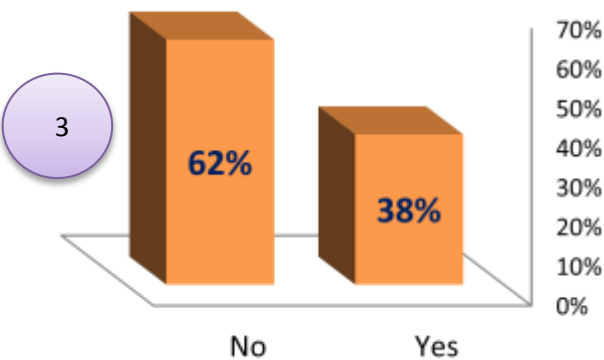
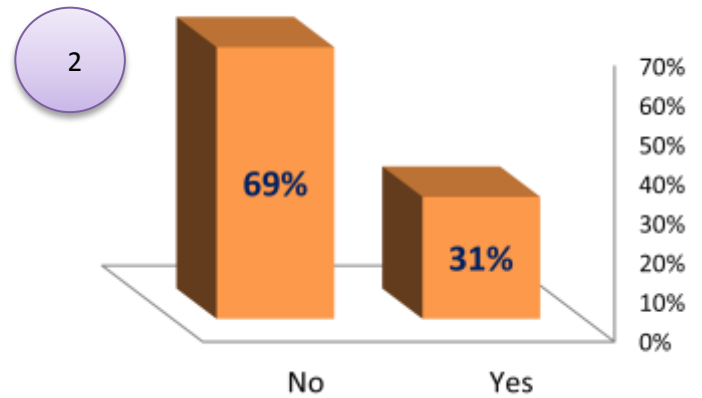
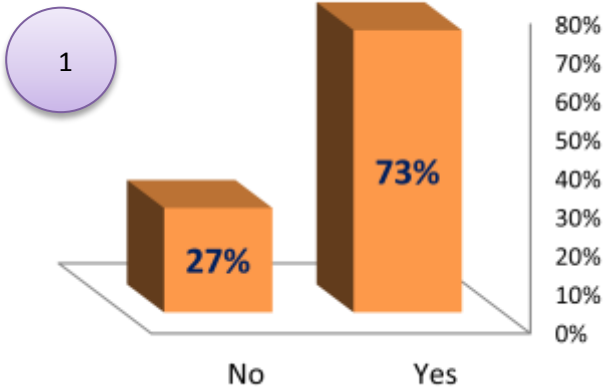
1: Needed on a data portal Indicate

2: Data missing or not Indicate

3: Data currently needed Indicate

15

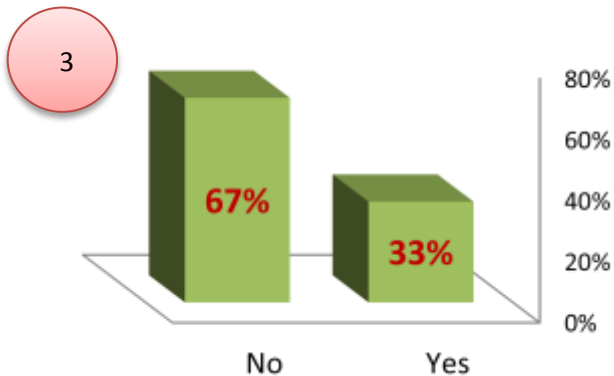
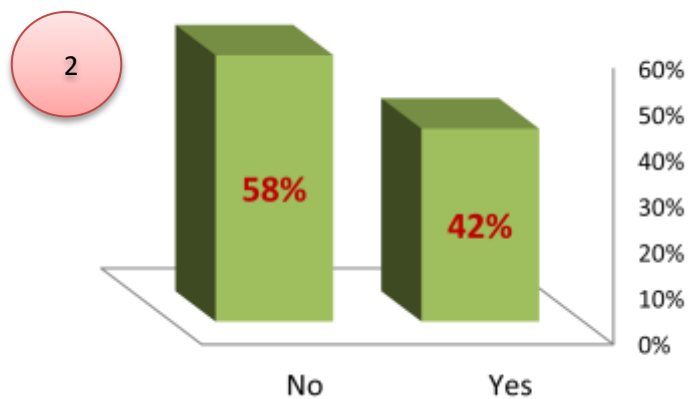
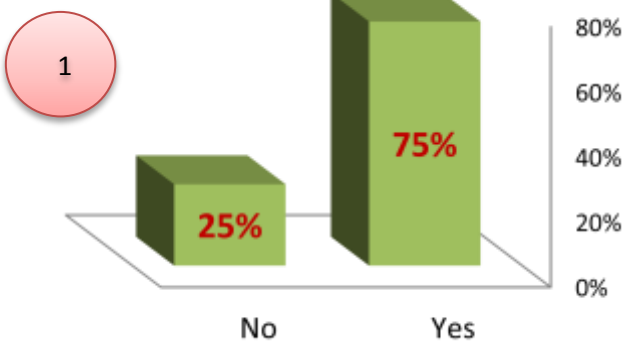
Topographic Maps



- 1: Data currently needed Indicate
- 2: Data missing or not Indicate
- 3: Needed on a data portal Indicate

16

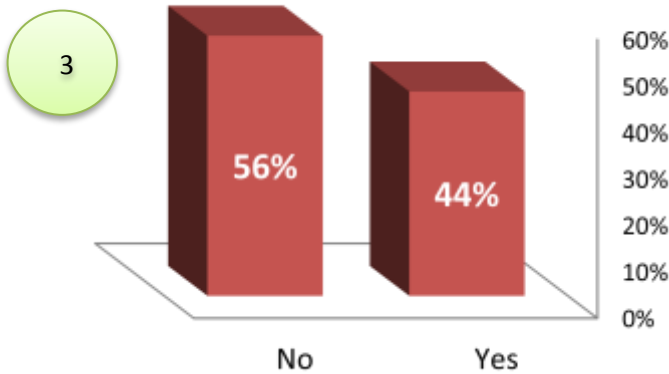
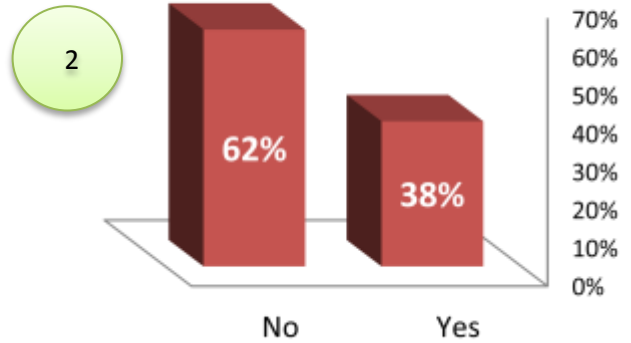
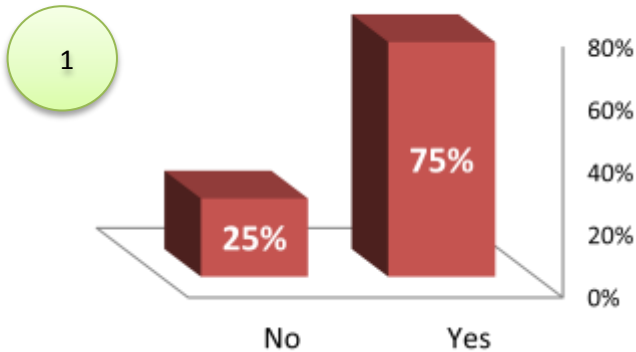
DEM



- 1: Data currently needed Indicate
- 2: Data missing or not Indicate
- 3: Needed on a data portal Indicate

17

Soil type



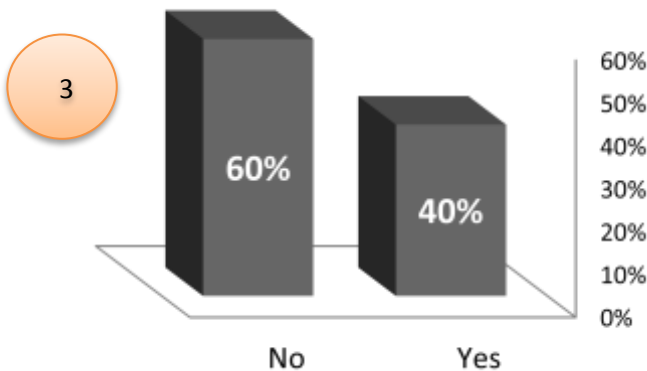
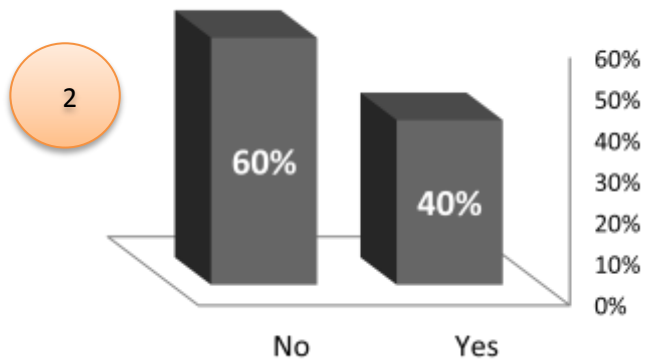
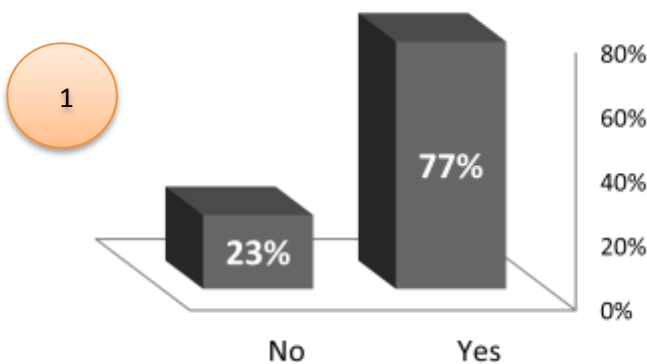
1: Data currently needed Indicate

2: Data missing or not Indicate

3: Needed on a data portal Indicate.

18

Land cover / Crop type



1: Data currently needed Indicate

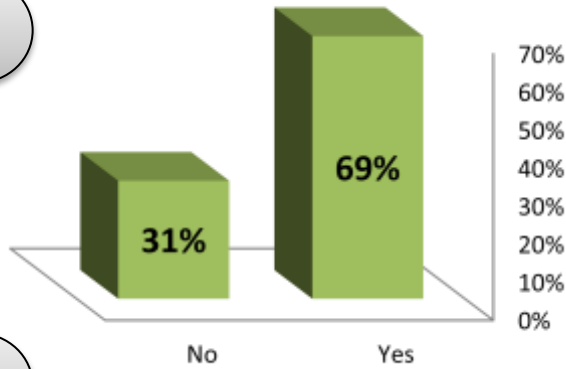
2: Data missing or not Indicate

3: Needed on a data portal Indicate

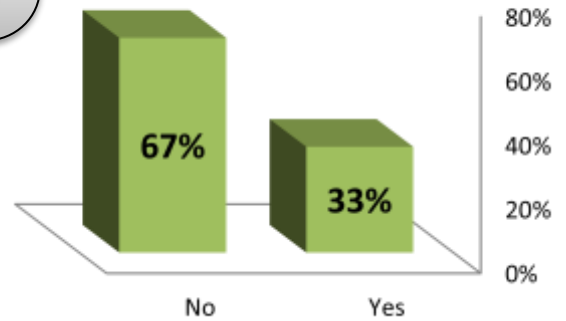
19

Irrigated area

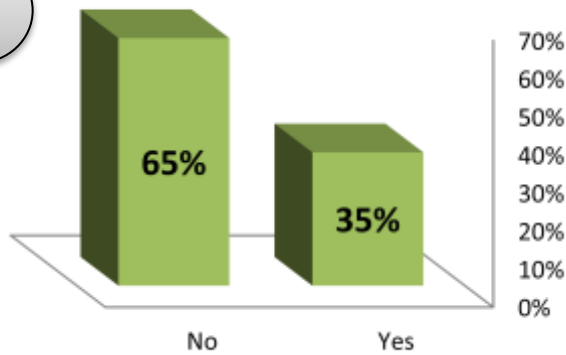
1



2



3



1: Data currently needed Indicate

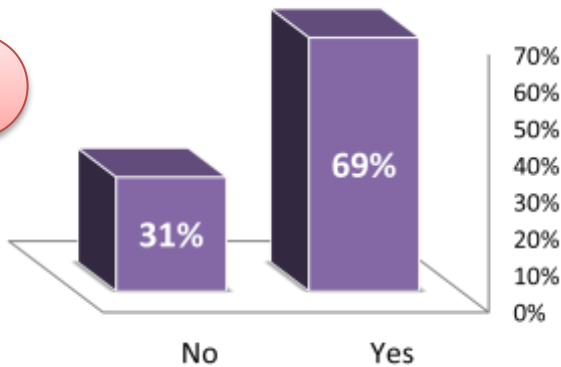
2: Data missing or not Indicate

3: Needed on a data portal Indicate

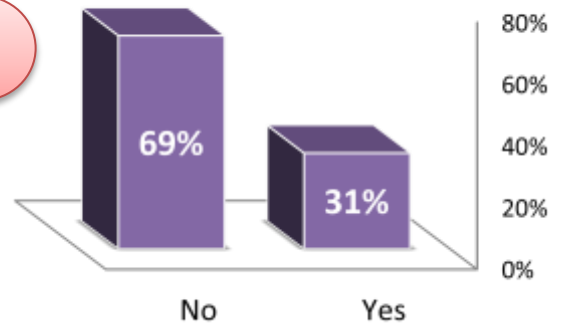
20

Satellite images

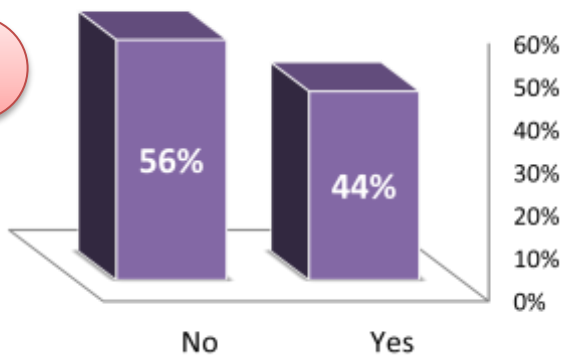
1



2



3



1: Data currently needed Indicate

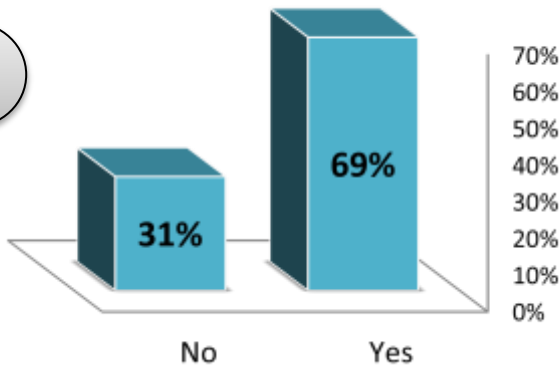
2: Data missing or not Indicate

3: Needed on a data portal Indicate

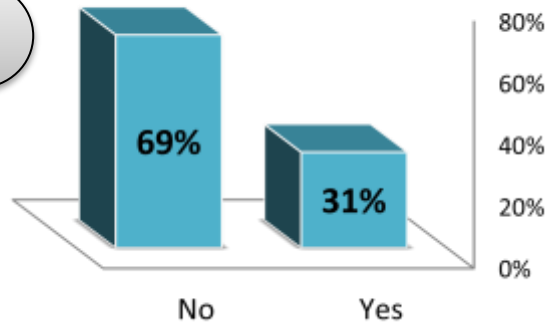
21

Other

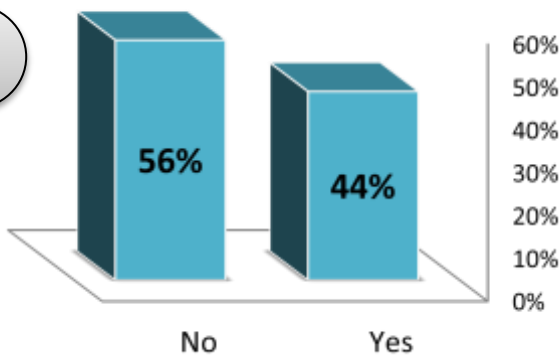
1



2



3



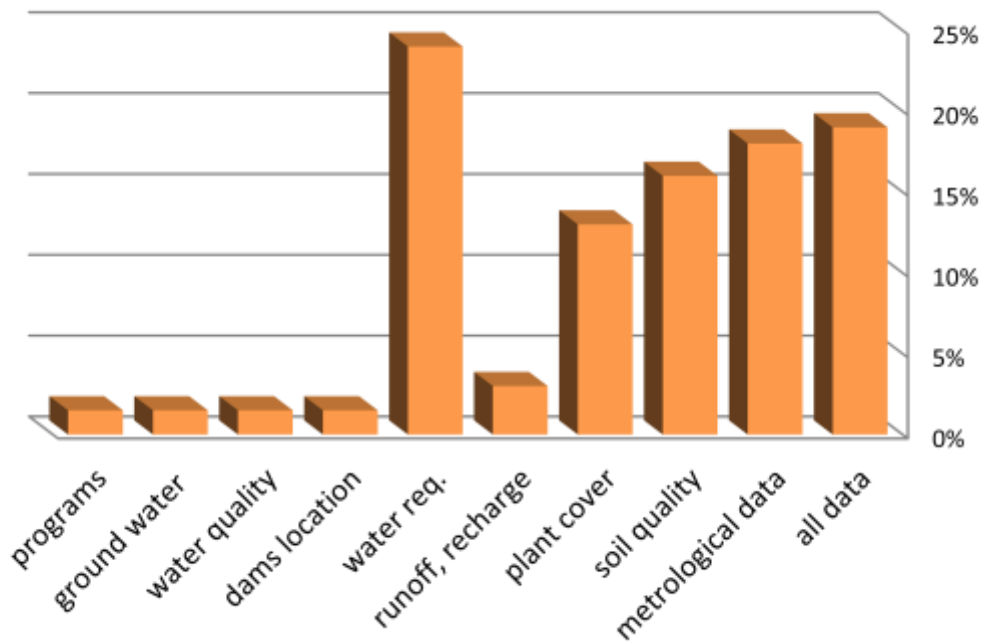
1: Data currently needed Indicate

2: Data missing or not Indicate

3: Needed on a data portal Indicate

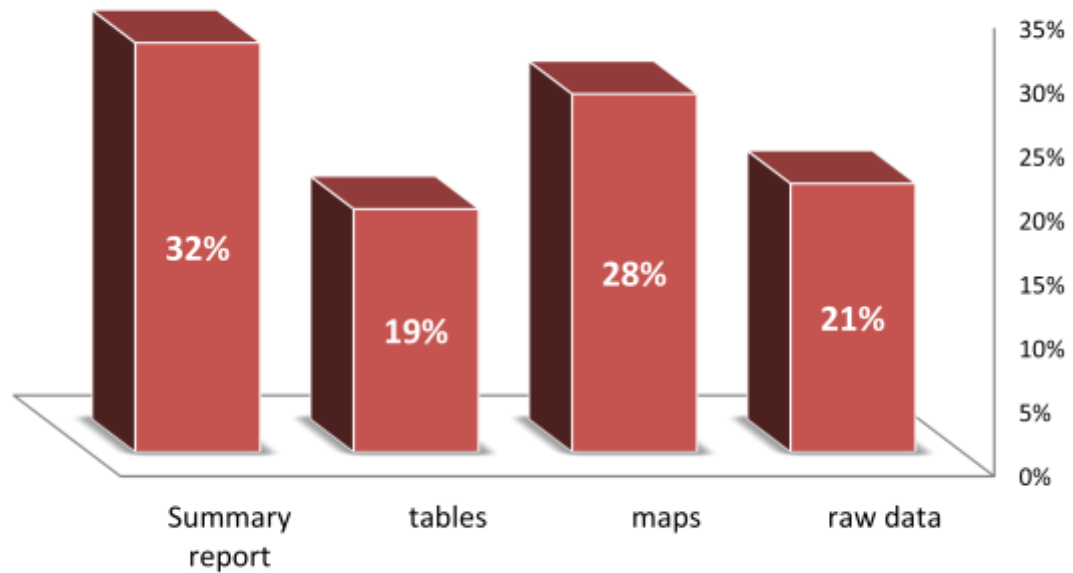
22

missing information or data in (irrigation) water management



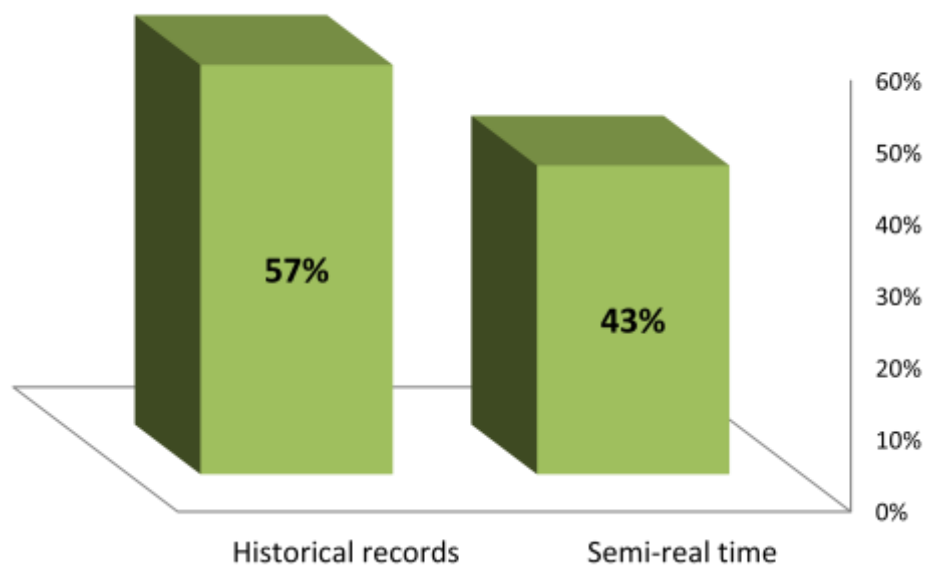
23

how would like to receive the information data



24

how often are updates needed



4.3 General Recommendations

After the end of the workshop, the participants recommended that:

- All information and data should be stored and located at WEC.
- WEC should be supported by Yemen government and Donor governments for sustainability and continuation of the benefits of the project.
- Capacity building should be taken in account.
- Updating the data also should be taken in account.