FORESTRY AND FOREST PRODUCTS RESEARCH INSTITUTE, JAPAN and FOREST RESEARCH INSTITUTE MALAYSIA



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# Part I:Introduction

Socio-economic survey tools are means designed to collect information on local resource management systems, resource use and the relative importance of resources for households and villages. Surveys also provide information on local interaction with the government decision-making systems and community perceptions of trends and priority issues regarding the conservation and establishment of protection forest. Knowledge about community-based institutions, which is also obtained, and their roles in the sustainable use and conservation of natural resources.

## Aims of this manual

This manual aims to provide practical steps for researchers conducting socio-economic studies among households in communities and villages. The techniques involved are rapid rural appraisal, survey research and field research.

This manual is accompanied by three supporting notes which are essential tools as a basis for gathering socio-economic information. The results can be used as input to management and decision-making.

## Part II: Undertaking socio-economic surveys

**There** are three (3) main steps in developing and **imp**lementing the socio-economic survey.

The first step is designing the survey, which includes survey design, sampling techniques and sample size, data requirement (types of data and data collection), target sample and questionnaire design. The next step is planning the survey. It involves scheduling the survey and training the enumerators. Enumerators must be trained to ensure that they fully understand and able to pose the questions to the respondents. The last step is implementation stage. This crucial stage involves key informant interviews, household surveys and focus group discussions.

#### Step 1:

•Designing the survey •Design •Sampling

- •Sample size
- •Baseline data

#### Step 2:

- Planning
- Scheduled survey
- Training enumerators

#### Step 3:

Implementation
 Rapid rural appraisal

 interview informant
 group discussion

 Households survey

## Step 1 – Survey design, sampling and data requirements

When conducting a survey, the first step is to determine the objective and purpose of the survey. This will provide the framework for the content and scope of the survey work. It is used to help identify the types of stakeholders and communities to be surveyed.

#### Data requirements and survey design

*Types of data:* There are two types of data to be collected, namely primary data and secondary data. Primary data collection involved rapid rural appraisal, individual and group discussion, as well as household survey. Secondary data comprises information gathered from published media such as books, articles, journal, and reports.

**Data to be collected**: The data required from the study area may be discussed with informants and communities. The discussion helps in planning the actual survey, improving the questions asked, formulating questionnaire design, determining sampling techniques and conducting the survey.



The data gathered through the survey process will need to reflect the purpose of the study. In developing the survey, other considerations are budget available, the length of time for the interview, availability of human resources needed to effectively conduct the surveys, entering the data and analyzing the results.

*Introduction of the project to local people:* A researcher must create good rapport with relevant government agencies and local people during initial site visit.

The first step to meet related local government officers to explain the nature of the study.

This is followed by meeting village headmen, village representatives and villagers living in the surrounding area. In many cases, it will be necessary to contact the local community leaders before visiting. An introductory meeting may also be organized.

Researchers must briefly introduce and explain the aim of the visit and study. It is important to ensure that both local people and the researchers/study team understand which area will be studied. The aim of research/study must also be clearly introduced to avoid misunderstandings or raise false expectations. Cooperation and support from local people are essential to ensure successful implementation of the study. It is easier to achieve this support if the first impression is good. Nevertheless, it must be stressed that the fieldwork consists only in data collection and does not promise something such as local development project.





#### Who should be included in the survey(s)?

The individuals and communities to be surveyed should be decided when considering the objectives and purpose of the survey. Different individuals or groups of individuals will be interviewed depending on the data needed. For a householdlevel survey, a representative of the household should be interviewed, but the village head or traditional local leader will be interviewed in a key informant interview. Usually key informants involved are from Village Development and Security Committee or Jawatankuasa Kemajuan dan Keselamatan Kampung (JKKK). Focus group discussions will include members of the community.

#### Sample size and sampling technique

*Sample size*: Determining the size of sample is important to ensure the data reliability. The sample size needs to be sufficient to ensure that the survey results will be statistically relevant. However, in many cases, the sample size also has to be balanced with the available resources – financial, human and time.

The bigger sample size require more enumerators and high cost, however the correct techniques to estimate the sample size will give more reliable results. In general, Roscoe (1992) proposed rule for determining the sample size is "greater than 30 and less than 500" as sufficient for most research. Further guidelines specified by Calia and Strazzera (1998) in their studies of bias and efficiency evaluation model, he defines "small sample size" as a sample of 100 or less; sample sizes 250-400 as "moderate sample size", and more than 1000 as "large sample size". They concluded that even for moderate sample size, most of the evaluation model provides good performance and adequate for the estimation of the parameters to be measured. This socio-economic study applied formula from Yamano (1985) in **Supporting Note 1**.



**Sampling technique:** Random sampling is used to ensure that the sample is representative of the study area, while avoiding bias in the results and ensuring that all elements of the population have an equal chance of being interviewed. There are a number of approaches to determining a random sample, e.g. simple random sample, systematic, stratified and clusters.

#### **Types of questions**

For all interview types (household interviews, focus groups and key informants), questions can be structured and asked as open, closed or partially open questions. The type of question used will depend on the information required. There are advantages and disadvantages of all question types (**Supporting Note 2**).

Through an open question, such as 'Does the existence of national parks have an impact on your daily life; either positive or negative effects'? The interviewer can uncover the meaning behind an answer, allowing respondents to provide examples and explain their answers. These types of questions are more time-consuming to recode and analyze. Open questions can be difficult to ask and interpreting the responses could be complex, so training enumerators is essential.

A partially open question requires the respondent to elaborate on any answer given. The advantages of these questions are that they are quicker and easier to ask and to analyze than open questions, but the interviewer may miss some information because of the lack of an appropriate category or the level of detail in the response. To avoid these problems, the respondents' answers should be recorded in full, and the interview should repeat the question if the respondent has not answered sufficiently. Closed questions, such as multiple choices or yes/no answers are used when key information is required, without the need for further explanation or in-depth understanding of the answer or issue. These questions are quick to ask and to analyse; however, the answers may result in a lack of depth and clarity. The example of closed question 'Are you aware with the existence of national park at the adjecent of your village?'.

## Step 2 – Planning and training the team

A well-trained and experienced team is essential for the success of any socioeconomic survey. Previous practical experience is a great asset to the team, with relevant technical knowledge in socioeconomics, forestry and natural resources. For purpose of this study, the research team appointed enumerators which have at least diploma certificate and preferably graduates. All members of the team will require rigorous and robust training in all types of survey (household, focus groups, and key informant interviews) to be conducted. They should have a thorough understanding of the aims of the work and the meaning of every question to be asked. A combination of workshop and practically field-based training will provide the best understanding of survey methods and procedures. During workshop, the objectives and research background are introduced to the enumerators. Basic information and knowledge about research is also explained in the workshop. This will enhance the communication skills and ability of enumerators to interview during data collection or survey. Other than that, some basic soft skill and techniques such as communication are also taught in the workshop. In addition, field training is very useful for checking the survey questions and means of data collection, thus providing an opportunity to make any necessary revision to the survey, interview questions and procedures. **(Supporting Note 3)** 



Consideration should also be given to the division of tasks between team members – team leader and interviewers. Preparation (designing the survey work, training the team, etc.) and scheduling the survey work are essential for a successful survey **(Supporting Note 4)**. Preparation of the survey team and agreeing on the work plan and time frame for completing the surveys should be finalized in advance. Villages should be given due notification prior to survey work and permission to conduct interviews should be sought and granted.

### **Step 3 - Implementation**

Survey approaches vary. Different approaches are used for different purposes. For the purpose of the socio-economic study, three survey methods are used:

- Rapid Rural Appraisal includes
  - -Community meeting
  - -Key informant interview
  - -Group discussion
- Household survey
- Field research

#### **Rapid Rural Appraisal**

The methods used include group discussion, community meetings, key informant interviews, mapping, ethno-histories, stories and taking-note. This RRA technique is a tool that enables a quick assessment of the existing environment and the possible impacts of the forest resource utilization and the other environmental services to the local socio-economic livelihood. Information collected during the RRA includes population size, socio-economic activities, household dependency on the forest resources and related issues faced by the community. This technique can be applied as a preliminary stage of the study, which will provide basic information, and ethno-histories of the study site for baseline in questionnaire design.

#### **Community meeting**

A community meeting is a valuable and useful way for the survey team to meet up with the villagers, explain the survey work – its aims and approach – and ensure that all members of the community understand the expected outcomes of the survey work **(Supporting Note 5)**. A decision to conduct a community meeting should be made only after meeting the community or village head. If possible, the village head could then help set up and conduct the community meeting. Information related to the community such as village profile could be obtained through District Office.





#### Key informant interviews

Key informants are individuals who are deemed to have knowledge of particular issues. Key informants will provide the interview team with detailed information and, importantly, interpretation of key issues that other members of the community might not be able to provide. Potential key informants should be selected, in consultation with the village head, 9 traditional local leader, for an in-depth interview with the survey team.

#### **Group discussion**

Group discussion involves selecting a small knowledgeable individuals from the community. In this study, the group discussion is conducted by researchers to explain the study and obtain comments or reactions of the respondents. The contribution of focus group is to design and assist questionnaire preparation. Focus group analysis is used to identify the issues to be raised in the questionnaire such as land use and forest dependency.

The draft questionnaire prepared could be tested in the focus group. Focus group thus helps to formulate the questions in simple language and easily understood.





#### **Field research**

#### Household survey

Village and household survey is used predominantly to collect quantitative and qualitative data, through structured interviews with the head of the household, using both closed and open questions. Survey forms for both household- and village-level surveys are designed to gather specific information, relevant to the survey objective, as discussed above.

Field research includes methods of research sometimes referred to as participant observation, direction observation and case studies. This technique provides qualitative data: observations not easily reduced to number. It enables better understanding on the socio-economic conditions and activities of villagers such as paddy farming, harvesting and marketing of forest resources. Case studies involved the narration of typical experience of villagers in relation to the utilisation of forest resources. The data gathered are used to cross-check information collected from the10 survey.

#### The questionnaire

In conducting this study, the formation of the questionnaire is the most important component. Formation of the questionnaire is based on the initial survey (Rapid Rural Appraisal) to the study area and also by the results of the initial questionnaire test in focus group. Formation of the questionnaire usually is categorized based on types of questions to gather basic information such as demographic background, perceptions and level of involvement. Example of questionnaire is attached in **Supporting Note 6**.

## Part III: Using the data collected

Analysis and use of the collected data should reflect the objectives of the survey.

#### **Data analysis**

The choice of method for data analysis will depend on the volume of data collected, the expected use of the findings and the availability of the analysis software.

Analysis of the data is usually done in a statistical package such as SPSS (Statistical Package for the Social Sciences) software. SPSS is a widely used program for statistical analysis in social science. It is also used by market researchers. health researchers. survey companies. government, education researchers. marketing organizations, data miners and others. Using such packages also allows the data to be entered and cleaned before analysis. Data may be exported to other software packages such as Microsoft Excel for further analysis and for preparation of tables and graphs. Some of the analysis that could be used are Descriptive analysis; Regression; Correlation; Anova and etc. (Supporting Note 7)

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*R-software:* The new well-known statistical software available free online is R. R is a language and environment for statistical computing and graphics. R provides a wide variety of statistical (linear and nonlinear modelling, classical statistical tests, time-series analysis, classification, and clustering) and graphical techniques, and is highly extensible. One of R's strengths is the ease with which well-designed publication-quality plots can be produced, including mathematical symbols and formulae where needed. **(Supporting Note 8)** 



The final analysis will need to reflect the original aims and objectives of the survey. To help structure the analysis, research questions could be developed, such as:

- How important is access to forest resources for the livelihoods of communities?
- To what extent, the communities depend on forest resources for the economic activities?
- Are the poorest communities more dependent on forest resources than other groups?
- How does the establishment of protected area affect the livelihoods of communities?
- What are the dependent communities' perceptions of ecotourism at the protected area (National park)?
- What is the relationship between communities and natural resources?
- What is the distribution of socio-economic impacts at the area, and what are the sources of leakage?
- What benefits have been foregone to surrounding communities with the establishment of protected area (National Park)?
- What are the social implications, particularly for indigenous people & local communities, associated with the management system of protected area?
- What strategies could be used to strengthen the ecotourism-environment-12 community relationships at the area that was gazetted as protected area?

## Note 1 – Sampling techniques

#### Determining a sample size

The appropriate sample size ultimately depends on the purpose of the study. For example, a population census will require 100% participation, and hence the sample size must equal 100%. Factors such as the available resources (time, budget, human) will affect the sample size but care should be taken not to jeopardize the statistical relevance of the sample.

Determination of sample size is important in determining the accuracy of the estimated value of the findings. A larger sample size implies more enumerators and involves high costs, but at the same time the sample size was chosen correctly, will give greater accuracy estimates.

Example of sample size determination by Yamano (1985) is as follows:

$$h = N
1+N (e)2
= 1136
1+1136 (0.05)2$$

= 400 respondents

Where,

n = Sample SizeN = Population Size (No. of households)e = level of precision

From the above example of sample size, taken at the level of precision of 5% or 0.05. The results showed that the sample size of 400 respondents is the reliable sample size.

## Note 2 – Format of questionnaire

When designing a survey and conducting an interview, it is important to consider how a question can be structured, that is, whether it should be open or closed, or a mixture of both. The type of question and way that it is asked will affect the answer provided.

In general, questions can be either open or closed. The main difference between these two types of question is that open questions allow respondents to explain their answers, whereas closed questions do not. With closed questions, respondents do not have the freedom to give an answer other than those provided in the list of questions. Partially open questions can also be used when conducting socio-economic surveys.

A survey/questionnaire will use a range of question types to ensure that the information is obtained in the most appropriate manner.

#### **Open questions**

Open questions – example from socio-economic study in 2014

"Does the existence of national parks have an impact on your daily life?"

*"In your opinion, is the conservation of forest/natural resources important?"* 

Open questions provide no options for possible prompts or answers and the respondent is able to answer completely freely. However, respondent answer might be long and enumerators must be well-trained to capture and get the points. Open-ended questions have both advantages and disadvantages (**Table 1**).

Table 1. Advantages and disadvantages of open questions

Advantages	Disadvantages
• The interviewer can elicit more	• The interviewer needs to have
information and possibly uncover	experience to build discussion of
new information that had not	particular topics and record the
been previously considered.	findings.
• The interview records can be used	• Data analysis requires expertise
in the report as interesting	and a lot of time.
illustrations.	
• The responses provide additional	
scope for analysis and allow a new	
interpretation of the conclusions.	

To mitigate the disadvantages of open questions, those conducting the survey or interview can:

- Train interviewers and provide direction for ongoing tasks to improve the quality of the data collected.
- Prepare a list of questions that allow interviewers to systematically explore the respondents' answers.
- Use open questions in training sessions with the team members.

#### Partially open questions

Partially open question – example from socio-economics study in 2014

"In your point of view, the existence of protection forest (National Park) is something good or vice versa" a) Good, because.....

b) Not good, because.....

In a partially open question, the answer is available as part of s category. Hence, the respondent is given a choice of responses: in the example above, the response is either 'increased' or 'decreased' (closed), "good" or "not good", and "yes" or "no" but the respondent is given the opportunity to explain his or her answer provided using 'because ...' (open). This type of question also has advantages and disadvantages, as set out in **Table 2**.

Advantages	Disadvantages		
<ul> <li>Easy answers and quick note-taking</li> <li>Easy analysis</li> </ul>	<ul> <li>Important answers could be missed if there is no appropriate category provided.</li> <li>Some information may be forced into existing categories and other information might be lost.</li> <li>If respondents hesitate and the interviewer helps with grid answers, the results are potentially biased.</li> </ul>		

**Table 2**. Advantages and disadvantages of partially open questions

To mitigate the disadvantages of partially open questions, those conducting the survey or interview can:

- Record all answers by taking notes or using a voice recorder.
- If respondents do not give an answer, repeat the question in a different way but without leading the respondent to an answer.

#### **Closed questions**

Closed questions –example from socio-economic study in 2014

View on the effects of Land	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Development Planning	(1)	(2)	(3)	(4)	(5)
toward:					
There is an increase of					
social problems in the local					
community					
Development project					
generates income					
households					
Development project helps					
participants / households					
out of the poverty situation					

With closed questions, respondents must choose one of the available answers, and no room is provided for further explanation or elaboration. Using closed questions is useful when time is short and very specific information is required. Usually in this type of question use Likert Scale as baseline for questionnaire.

Again, this type of question has advantages and disadvantages, as detailed in **Table 3**.

**Table 3**. Advantages and disadvantages of closed questions

Advantages	Disadvantages
<ul> <li>Answers can be quickly gathered, thus saving time.</li> <li>Comparison of respondents' and groups' answers over time is easy.</li> </ul>	• Further analysis of closed questions can be difficult because of the lack of supplementary questions for respondents to elaborate on the reasons for their answer.

To avoid the disadvantages of this type of question, the interviewer could ask further questions to explore respondents' answers in more depth.

### Note 3 – Do & Don't in Conducting Socio-Economic Interviews

#### Do

- 1. Understand the projects background and objectives
- 2. Aware of questionnaire contents
- 3. Beware of languages
- 4. Proper attire or dress code (Formal, casual but most important neat, and clean)
- 5. Always SMILE
- 6. Use suitable, understandable and simpler words (layman terms)
- 7. When asking a question:
  - a. Speak when respondent ready
  - b. Control volume of voice
  - c. Greet sincerely
  - d. Introduce yourself, show name tag with organization logo
  - e. Explain the purpose of the survey
  - f. Explain the importance of study
  - g. Inform respondent that information given is confidential
  - h. Ask only related question
- 8. Use supporting tools such as Likert Scale Card, Pictures, etc.
- 9. Be a good listener
- 10. Ask for permission before taking photo
- 11. Give a door gift as token of appreciation
- 12. End interview session with THANK YOU

#### Don't

- 1. Don't ask question if the respondent is not ready
- 2. Don't ask respondent's full name, to avoid respondent feeling uncomfortable
- 3. Don't force if people do not want to be interviewed, especially in household survey
- 4. Don't take an advantage to look around respondent's house
- 5. Don't force respondent to get an answer, especially on income. Ask politely, instead.
- 6. Don't ask for hand phone number, if not necessary.

## Note 4 – Conducting the survey

Before undertaking a survey, the following key steps should be followed. *Step 1: Preparation and scheduling of the survey work* 

- Preparation and scheduling of the survey work is essential for a successful survey
- The work plan and time frame for completing the surveys should be agreed with the team in advance.
- The roles and responsibilities of each team member should be clearly defined.
- Data sheets and questionnaires must be prepared
- The team trained

#### Step 2: Ask permission and inform about the survey work

- Ask permission from the village head prior to carrying out any survey
- Ensure that the village has been informed and permission from the village head has been obtained sufficiently in advance of the survey
- If necessary, write letter to Local Authority (JAKOA, District Office, etc.), and Head of Villages

#### Step 3: Meeting with community

- If possible, a meeting with the community or at least the head of the village should take place at the start of the survey
- Introduce the survey team members
- Clearly and fully explain the survey, its purpose and how it will be conducted

## **Note 5 – Guidance for community meetings**

Community meetings are vital to the success of surveys and it is important to engage communities/villagers. Building community engagement takes time and should not be forced or rushed. Socio-economic surveys and group discussions, if done correctly, can be a good way to begin building a relationship with the community. Often information collected during socioeconomic surveys is personal in nature and even confidential, and it should always be handled sensitively.

The guidance below will help to ensure that the community meeting gets off to the best possible start.

- 1. Set the village hall as the meeting place, and **schedule the meeting with village leaders**.
- 2. Start the meeting by:
  - Introducing all the team members
  - Explain the purpose and background of the study
  - The role of the organization undertaking the survey work
  - Ensure that the outputs of the survey work are clearly explained and expectations are realistic
  - Avoid making promises
- 3. Describe the activities and what will be achieved from this study.
  - What will be provided to the community?
  - How can the community participate?
  - How can the community assist and advise the team during the study?
- 4. Explain to the community
  - The importance of the study's schedule and activities
  - Check whether there are potential problems or conflicts with local activities. Determine an acceptable schedule for major activities.
- 5. Villages participation
  - Invite the villagers to introduce themselves or their village.

- Find out if villagers have time to participate in the survey as needed, and when they have time to do it.
- 6. Recognize key informant
  - Informal discussions may guide the survey team to recognize key informants, especially those who have knowledge related to the study.
- 7. Check whether any community members feel unhappy about the proposed activities. If so, explain any specific aspects that they find unacceptable. Be willing to accept specific bans and modify the approach accordingly.
- 8. Close the meeting. **Start planning survey activities based on the available options.**

Note 6 - Questionnaire



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Dan



#### Forestry and Forest Products Research Institute (FFPRI), Japan

#### KAJIAN KEPENTINGAN SOSIO-EKONOMI PENDUDUK TEMPATAN SEKITAR KAWASAN HUTAN SIMPAN DAN HUTAN PERLINDUNGAN TAMAN NEGARA, MELALUI KEPENGGUNAAN HUTAN SECARA LESTARI DAN KONSERVASI

Socio-economic Study of The Local that Live Near The Adjecent of Forest Reserve and National Park Protection Forest Through Sustainable Use of Forest and Conservation

Institut Penyelidikan Perhutanan Malaysia (FRIM) bersama Forestry and Forest Products Research Institute (FFPRI) Japan sedang menjalankan survei 'Kajian Kepentingan Sosio-Ekonomi Penduduk Tempatan Sekitar Perlindungan Taman Negara Melalui Kepenggunaan Hutan Secara Lestari dan Konservasi'. Survei ini adalah sebahagian daripada kajian 'Research on Development of Forest Carbon Monitoring Methodologies for REDD+ in Peninsular Malaysia'. Tujuan survei ini dijalankan adalah untuk mengumpul maklumat impak sosio-ekonomi penduduk tempatan terhadap kepenggunaan kawasan hutan perlindungan Taman Negara. Segala kerjasama di dahului dengan ucapan terima kasih. Segala kerjasama di dahului dengan ucapan terima kasih.

> Sebarang pertanyaan mengenai kajian ini, sila berhubung dengan Program Ekonomi & Analisa Strategik, Institut Penyelidikan Perhutanan Malaysia (FRIM), 52109 Kepong, Selangor, Malaysia. Tel: 03-62797547/62797000

RES -					
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1. No sampel/ <i>No of sample</i>	Penemuramah/Interviewer:
2. Nama Kampung/ <i>Name of village</i>	
a. Kg. K. Tahan	f. Kg. Gusai
b. Kg. Pagi	g. Kg. K. Koh
c. Kg. Bantal	h. Kg. Merapoh
d. Kg. K.Sat	i. Kg. Gol
e. Kg. Merting	
j. Lain-lain/ (others)	(nyatakan)/(please state)

\_\_\_\_

#### Penggunaan sumber-sumber dan tanah hutan oleh ahli-ahli keluarga anda? A) The usage of natural resources and forest land by you and your family?

1)	Tanah untuk bercucuk tanam/ Agriculture	1 = Ya / Yes	2 = Tidak/ No
2)	Menangkap ikan/ Fishing	1 = Ya / Yes	2 = Tidak/ No
3)	Memburu binatang / Hunting animal	1 = Ya / Yes	2 = Tidak/ No
4)	Penghasilan pokok herba untuk perubatan	1 = Ya / Yes	2 = Tidak / No
	Medicinal plants/herbs for medicine		
5)	Penghasilan rotan/ <i>Rattan harvesting</i> 1 = Ya	/ Yes 2 = Tid	lak/ No
6)	Sumber air untuk pertanian/ Water for agriculture	1 = Ya/ Yes	2 = Tidak/ No
7)	Sumber bahan-bahan kraftangan/ Handcraft	1 = Ya/ Yes	2 = Tidak/ No
8)	Penghasilan buah-buahan hutan/ Wild fruits	1 = Ya / Yes	2 = Tidak / No
9)	Penghasilan buluh/ Bamboo harvesting	1 = Ya/ Yes	2 = Tidak/ No
10)	Penghasilan madu lebah/ Honey	1 = Ya / Yes	2 = Tidak / No
10)	Lain-Lain / Others		

#### Sebagai penduduk tempatan, adakah masalah-masalah yang berikut B) dihadapi oleh keluarga anda? As local people, do the following problems faced by your family?

1)	Masalah hasil hutan yg. Berkurangan/ Decrease in forest products	1 = Ya / Yes	2 = Tidak/ No
2)	Masalah kekurangan tanah bercucuk tanam Shortage of farming land	1 = Ya / Yes	2 = Tidak/ No
3)	Kekurangan tenaga pekerja/ Shortage of manpower	1 = Ya / Yes	2 = Tidak/ No
4)	Masalah penyakit tanaman/ Crop diseases	1 = Ya / Yes	2 = Tidak / No
5)	Hasil tanaman susah untuk dipasarkan	1 = Ya / Yes	2 = Tidak / No
	Crop difficult to be marketed		
6)	Masalah sistem pengairan untuk tanaman	1 = Ya / Yes	2 = Tidak/ No
	Problem in crop irrigation system		
7)	Larangan menjalankan aktiviti pemungutan		
	hasil hutan	1 = Ya / Yes	2 = Tidak/ No
	Prohibiton on collecting forest products		
8)	Lain-Lain / Others		

- C) Pandangan terhadap projek konservasi/pemuliharaan Hutan Perlindungan Taman Negara / Views on conservation projects/ Conservation of National Park Protection Forest
  - 1. Adakah saudara sedar akan kewujudan persekitaran taman negara bersempadanan penempatan saudara?/ *Are you aware with the existence of National Parks?* 
    - a. Ya/ yes b. Tidak/ No
  - 2. Adakah kewujudan persekitaran taman negara memberi kesan ke atas kehidupan seharian saudara; samada kesan positif atau negatif? / *Does the existence of national parks have an impact on your daily life; either positive or negative effects?*

Kesan-Kesan Pembangunan/ Impact of development	Sila tanda bahagian yang sesuai/ Please tick the suitable part	Sila catatkan keterangan/ ulasan yang diberikan semasa temubual/ <i>Comments</i>
C21. Kesan-kesan positif/ <i>Positive</i> <i>impacts</i>	<ul> <li>a. Tambah pendapatan/ Increase income</li> <li>b. Tambah pekerjaan/ Employement</li> <li>c. Pembangunan tempatan/ Local development</li> <li>d. Tempat pelancongan/ Tourism</li> <li>e. Kemahiran berkomunikasi/ Communication skills</li> <li>f. Kemahiran berniaga &amp; berurusniaga/ Business skill</li> <li>g. Meningkatkan kemahiran kaum wanita – menceburi industri kecil/ Women skill- Small industry</li> <li>h. Merperkenalkan kebudayaan setempat/ Cultural</li> <li>i. Lain-lain (nyatakan) / Others</li> </ul>	
C22. Kesan-kesan negative/ Negative impacts	<ul> <li>a. Gangguan masyarakat luar/ Disturbance from the outsider</li> <li>b. Kekurangan sumber pendapatan/ lack of income resources</li> <li>c. Kekurangan tanah untuk pertanian / land shortage for agricultural purposes</li> <li>d. Kekurangan ruang mencari hasil hutan / prohibition in collecting forest products</li> <li>e. Lain-lain (nyatakan)/ others:</li> </ul>	

2. Secara umumnya, apakah pandangan/perasaan saudara mengenai kewujudan persekitaran taman negara bersempadanan dengan penempatan saudara; adakah ianya sesuatu yang baik atau sebaliknya? *Generally, what is your views on the existence of a national park environment adjacent to your housing areas, is it a good thing or not?* 

- 3. Apakah pandangan saudara mengenai pelancongan/pelancong; dan kemungkinan industri ini akan lebih berkembang pada masa hadapan khususnya dipersekitaran taman negara ini? *What is your opinion on travel / tourist; and the industry will be more likely to grow in the future, especially on the area nearby the park?*
- 5. Adakah aktiviti pemuliharaan sumber hutan/sumber semulajadi sesuatu yang penting bagi saudara? Nyatakan: *Does forest conservation / natural resources is crucial for you?Please state:*

6. Pada pandangan saudara, dengan berkembangnya industri/aktiviti pelancongan setempat; adakah ia akan memberi pulangan/keuntungan atau sebaliknya kepada diri saudara sendiri dan juga komuniti secara umum? In your point of view, is the development of industry / local tourist activities will provide a return / profit or otherwise, to your own self and the community in general?

Individu/ Individual

Positif/Positive	Negatif/Negative
Komuniti/ Community	
Positif/ Positive	Negatif/ Negative

7. Adakah pihak berkuasa taman negara melibatkan saudara atau komuniti setempat secara langsung dalam pembangunan taman negara diperingkat-peringkat tertentu (perancangan, pendidikan, maklumat/informasi & sebagainya?

Does the national park authorities involve you or local communities directly in park development on specific stages (planning, education, information / information & others?

D) Pandangan terhadap penggunaan kawasan Hutan Perlindungan Taman Negara dengan bijaksana mengikut keutamaan bagi setiap penggunaan seperti yang berikut:

*Views on the usage of Protection Forest National Park according to priority as follows:* 

	Pilihan mengikut keutamaan/			
	Choice of	f priority		
1. Pemeliharaan (Dibiarkan secara semulajadi)/	1	2	3	4
<i>Conservation (Left naturally)</i>				
2. Pembangunan eko-pelancongan/ Development of	1	2	3	4
eco-tourism				
3. Pembalakan dan menanam semula dgn sistemetik/	1	2	3	4
Logging and replanting with systematic				
4. Dibuka semula utk pembangunan pertanian/	1	2	3	4
Reopened for agricultural development				

# E) Kedudukan ahli-ahli isi rumah (iaitu ahli keluarga yang tinggal bersama) di kampung ini/ *The members of the households (ie family members living together) in the village.*

- 1. Jumlah ahli keluarga yang tinggal bersama/ *Number of family members living together* \_\_\_\_\_\_
- 2. Bilangan ahli keluarga yang bekerja/ *Number of family members working*
- 3. Bilangan ahli keluarga yang bergantung kepada ahli lain/ *Number of dependent family member to other members* \_\_\_\_\_\_
- 4. Bilangan ahli keluarga yang mengganggur/ *The number of jobless family members*
- 5. Bilangan ahli keluarga berhijrah/ *Number of family members migrated*
- 6. Bangsa (Sila nyatakan)/Race (please state) \_\_\_\_\_
- 7. Kawasan tanah pertanian dimiliki oleh keluarga/ *The area of agricultural land owned by the family* :
  - a. Luas tanah asal yang dimiliki / *Land area owned* \_\_\_\_\_\_ ekar/ *acres*
  - b. Jenis tanaman yang diusahakan (Mengikut keutamaan) / *Types of crops cultivated (by priority)*

1. Padi/Paddy	2. Getah /	Rubber	3. Dusun/0	Garden
4. Tnm. Kontan/ Cash (nyatakan)/Others (please state	crops	5. K. Sawit,	/ Oil palm	6. Lain-lain

8. Maklumat tanaman di atas:/ *Information on the crop above*:

Bil. <i>Bil</i>	Jenis tanaman <i>Type of crop</i>	Luas (ekar) Area (acre)	Umur tanaman sekarang Age of crop
1.	Padi / Paddy		
2.	Getah/ Rubber		
3.	Dusun/ Garden		
4.	Tanaman kontan/ Cash crops		
5.	Kelapa sawit/ <i>Oil palm</i>		
6.	Lain-lain (nyatakan)/ Others		
	(please state)		
	Jumlah luas/Total area		

#### F) Status pekerjaan ahli-ahli Isirumah yang bekerja Employment status of working household member

(F1)	(F2)	(F3)	(F4)	(F5)	(F6)	(F7)	(F8)
Ahli/	Umur	Jantina/	Pencapaian	Taraf	Pekerjaan	Status	Pekerjaan
Membe	/	Sex	Pendidikan	Perkahwina	Utama	Pekerjaan	Sekunder
r	Age		/	n	/Main job	/Employment	/Secondary
	_	1 = L/M	Education	/Status	1= Pencari hasil	status	employment
		2 = P/F	achievement		hutan/Seekers	1=Majikan/	(sambilan)
				1=Bujang/Sin	of forest	Employer	(part time)
			0=Tiada/Non	gle	2= Penanam	2=Pekerja/	
			е	2=Berkahwin	farmer	Employee	
			1=Sek.	/Married	3= Bertani	3=Kerja	
			Ren(Primary	3=Duda/jand	dusun/Garden	sdr/Freelance	
			2=Sek	a/Divorceu	farmer		
			Men(Secondar		4= Penoreh getah	4=Pekerja	
			y school)		/Rubber tapper	keluarga	
			3=Tkt 6(Form		5= Penanam sayur	tanpa upah	
			6)		/ Farmer	/ Employee	
			4=Kolej &		6– rekerja kontrak/Contract	family	
			U/Collegue &		workers	without	
			U)		7=	wages	
					Berniaga/Business		
					8.=		
					Kerajaan/Govern		
					ment		
					9= Swasta/Private		

			10= Pesara/Retired 11= Suri rumah/Housewife 12= Lain- lain/Others	
Beker				
ja/W				
orkin				
8				
1				
(Ketu				
a)(Le ader)				
2				
3				
4				
5				
6				
Tak				
Kerja				
, Joble				
SS				
91				
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97				
98				
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100				
101				
102				

#### PENGGUNAAN SUMBER-SUMBER EKOSISTEM HUTAN SIMPAN DAN KAWASAN SEKITAR & HUTAN PERLINDUNGAN TAMAN NEGARA, 2013 USE OF FOREST RESERVED ECOSYSTEM RESOURCES AND RESPECTIVE AREAS & FORESTS PRESERVED NATIONAL PARK, 2013

#### G) Penghasilan sumber bukan kayu (Non-timber Forest Products)

- 1. Jenis hasil / *Type of product* 1=rotan/*Rattan* 2=buluh/*Bamboo* 3=bahan kraftangan/*Crafts materials* 4= Keranji / *Black velvet* 5=petai / *Bitter beans* 6=ubatan/*Medicines* 7=madu/*Honey* 8= Lain- lain/*others*:
- Tahun berapa terlibat/ Year involved:\_\_\_\_\_ 2. Kekerapan masuk hutan (2013)/ Frequency enter forest: 4. \_(trip/bulan)/(trip/month) \_\_\_\_\_( bulan/setahun) / (month/years) Jenis spesis yang diambil/ Type of species taken 5. 1. Rotan/ Rattan \_ \_\_\_\_ \_\_\_\_\_ 4. Keranji/ Black velvet \_\_\_\_\_ 5. Petai / Bitter beans \_\_\_\_\_ \_\_\_\_\_ 6. Ubatan/ *Medicines* \_\_\_\_\_\_ \_\_\_\_\_ 7. Madu / honey \_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ 8.\_\_\_\_\_
- 6. Maklumat pungutan hasil untuk semua spesis/ Information on revenue of collection for all species

Bil/	Jenis spesies	Kekerapan	Jumlah hasil	Lokasi/	Jarak
Bil	dipungut/	dipungut	dipungut per trip	Location	(km)/
	Species collected	sebulan/	(nyatakan unit sama		Distance
		Frequency	ada dalam kg,		(km)
		collected in	bilangan, batang,		
		the month	dll)/		
			Total revenue collected		
			per trip		
			(indicate whether units		
			in kg, number, trunk,		
			etc.		
1.	Rotan/ Rattan				
2.	Buluh/Bamboo				
3.	Bahan				
	kraftangan/				
	Crafts materials				
4.	Keranji/ Black				

	velvet		
5.	Petai/ Bitter		
	beans		
6.	Pokok ubatan/		
	Medicine plants		
7.	Madu/Honey		

7. Nyatakan alatan yang dibawa/digunakan (kos tetap)/ *Specify tools brought/used (fixed costs)* 

(a)	(b)	(c)	(d)
Jenis alatan/	Bilangan	Harga beli	Jangkahayat
Type of equipment	Unit	(RM)	(tahun)
		Price(RM)	Lifespan (years)
1			
2			
3			
4.			

- 8. Lain-lain kos terlibat (makanan, kos luar jangka): RM \_\_\_\_\_\_ Other related costs (food, contingency cost): RM \_\_\_\_\_\_
- 9. Jumlah pengambilan hasil/trip/bulan (unit)/ *Total revenue intake / trip / month (units)* 1. Rotan/ Rattan \_\_\_\_\_ 2. Buluh/ Bamboo \_\_\_\_\_ 3. Bhn. Kraftangan/ Crafts materials 4. Keranji/ Black velvet \_\_\_\_\_ 5. Petai/ Bitter beans \_\_\_\_\_ 6. Ubatan/ Medicine \_\_\_\_\_ \_\_\_\_ 7. Madu/Honey \_\_\_\_\_\_ 8. \_\_\_\_ 9.\_\_\_\_\_ Jenis kenderaan yang digunakan :/ *Types of vehicles used* 10. Lokasi pengambilan hasil/ Location of sample taken 11. (a) (b) Tempat Jarak dr tempat (Htn. Simpan, Tnh. Kerajaan, tempat tinggal (km) T. Negara atau Hakmilik) Place (Conserved Forest, Government Land Distance from residence (km) Country Land or Preseved Land)

\_\_\_\_

- 1. Rotan/ Rattan
- 2. Buluh/ Bamboo
- 3. Bhn. Kraftangan/ Crafts materials

6. Ubatan/ Medicine	5. Petai / Bitter	beans		
7. Madu/Honey	6. Ubatan/ Me	dicine		
8	7. Madu/Hone	у		
9	8	,		
Bilangan pekerja yang terlibat untuk satu-satu trip/ The number of employees involved for a trip         1. Ahli keluarga/ Family members       orang/per         2. Bukan ahli keluarga/Non Family members       orang/per         2. Bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip:RM       / gerson         Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip:RM       / person         Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip)/       / person         Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip)/       Duration of work during sample collecion (per trip)         1. Masuk hutan (jam) / In forest (hours)	9			
1. Ahli keluarga / Family members       orang / per         2. Bukan ahli keluarga / Non Family members       orang / per         Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu       trip:RM / seorang         Wages paid if not family members per trip : RM / person       Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip) /         Duration of work during sample collecion (per trip)       1. Masuk hutan (jam) / In forest (hours)	Bilangan peker involved for a tra	ja yang terlibat untuk satu- ip	satu trip/ The num	ber of employees
2. Bukan ahli keluarga/Non Family members orang/ pe         Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu         trip:RM / seorang         Wages paid if not family members per trip : RM / person         Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip)/         Duration of work during sample collecion (per trip)         1. Masuk hutan (jam) / In forest (hours)         2. Keluar hutan (jam) Out forest (hours)         1=Ya/Yes       2=Tidak/         Adakah anda memproses sendiri hasil yang diambil:         Do you process the result taken by yourself:         Jika 'tidak' dimanakah ianya dijual dan purata harga jualan (ex-farm)         If 'no' where is it sold and the average selling price (ex-farm)         (a)       (b)       (c)         (a)       (b)       (c)	1. Ahli keluarg	a/ Family members		orang/pers
Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip:RM / seorang Wages paid if not family members per trip : RM / person Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip)/ Duration of work during sample collecion (per trip) 1. Masuk hutan (jam) / In forest (hours) 2. Keluar hutan (jam) Out forest (hours) 1=Ya/Yes 2=Tidak/ Adakah anda memproses sendiri hasil yang diambil: Do you process the result taken by yourself: Jika 'tidak' dimanakah ianya dijual dan purata harga jualan (ex-farm) If 'no' where is it sold and the average selling price (ex-farm) (a) (b) (c) (d) Jenis NTFP Lokasi jualan dan jarak Harga jualan Cara (Nama syarikat) (RM)/unit jualan Type of NTFP Location of sale and distance Price Method of sale (Name of company) (RM)/Unit	2. Bukan ahli k	eluarga/Non Family member	<i>'S</i>	orang/ pers
Jangkamasa Kerja Kerika pengambhan hash (untuk sedap trip)/         Duration of work during sample collecion (per trip)         1. Masuk hutan (jam) / In forest (hours)         2. Keluar hutan (jam) Out forest (hours)         1=Ya/Yes         2=Tidak/         Adakah anda memproses sendiri hasil yang diambil:         Do you process the result taken by yourself:         Jika 'tidak' dimanakah ianya dijual dan purata harga jualan (ex-farm)         If 'no' where is it sold and the average selling price (ex-farm)         (a)       (b)       (c)       (d)         Jenis NTFP       Lokasi jualan dan jarak       Harga jualan       Cara         (Nama syarikat)       (RM)/unit       jualan         Type of NTFP       Location of sale and distance       Price       Method of sale	trip:RM Wages paid if n	/ seorang ot family members per trip : R. ria kotika pongambilan bagi	M	/ person
Duration of work during sample collection (per trip)1. Masuk hutan (jam) / In forest (hours)	Jangkamasa ke	rja ketika pengambilan hasi	ll (untuk setiap trip	<i>)</i> //
1. Masuk nutan (jam) / In forest (nours)         2. Keluar hutan (jam) Out forest (hours)         1=Ya/Yes         2=Tidak/         Adakah anda memproses sendiri hasil yang diambil:         Do you process the result taken by yourself:         Jika 'tidak' dimanakah ianya dijual dan purata harga jualan (ex-farm)         If 'no' where is it sold and the average selling price (ex-farm)         (a)       (b)       (c)       (d)         Jenis NTFP       Lokasi jualan dan jarak       Harga jualan       Cara         (Nama syarikat)       (RM)/unit       jualan         Type of NTFP       Location of sale and distance       Price       Method of sale	Duration of wor	K auring sample collecton (per	r trip)	
2. Keidal fidtal (jail)       Out forest (nours)       1=Ya/Yes       2=Tidak/         Adakah anda memproses sendiri hasil yang diambil:	1. Masuk nutar	(jam) / In forest (hours)		_
Adakah anda memproses sendiri hasil yang diambil:	2. Keluai Ilulai	(Jani) Our jorest (nours)	1=V_2	- /Vec 2=Tidak/N
Jika 'tidak' dimanakah ianya dijual dan purata harga jualan (ex-farm)If 'no' where is it sold and the average selling price (ex-farm)(a)(b)(c)(d)Jenis NTFPLokasi jualan dan jarakHarga jualanCara(Nama syarikat)(RM)/unitType of NTFPLocation of sale and distancePriceMethod of sale(Name of company)(RM)/Unit	Adakah anda r Do you process i	nemproses sendiri hasil yar the result taken by yourself:	ng diambil:	
If 'no' where is it sold and the average selling price (ex-farm)(a)(b)(c)(d)Jenis NTFPLokasi jualan dan jarakHarga jualanCara(Nama syarikat)(RM)/ unitjualanType of NTFPLocation of sale and distancePriceMethod of sale(Name of company)(RM)/Unit(RM)/Unit	Jika 'tidak' din	hanakah ianya dijual dan pu	ırata harga jualan (	ex-farm)
(a)(b)(c)(d)Jenis NTFPLokasi jualan dan jarakHarga jualanCara(Nama syarikat)(RM)/unitjualanType of NTFPLocation of sale and distancePriceMethod of sale(Name of company)(RM)/Unit(RM)/Unit	If 'no' where is	it sold and the average selli	ng price (ex-farm)	
Jenis NTFPLokasi jualan dan jarakHarga jualanCara(Nama syarikat)(RM)/unitjualanType of NTFPLocation of sale and distancePriceMethod of sale(Name of company)(RM)/Unit(RM)/UnitImage: Cara	(a)	(b)	(c)	(d)
(Nama syarikat)(RM)/unitjualanType of NTFPLocation of sale and distancePriceMethod of sale(Name of company)(RM)/Unit(RM)/UnitMethod of sale	Jenis NTFP	Lokasi jualan dan jarak	Harga jualan	Cara
Type of NTFPLocation of sale and distancePriceMethod of sale(Name of company)(RM)/Unit		(Nama syarikat)	(RM)/unit	jualan
(Name of company) (RM)/Unit	Type of NTFP	Location of sale and distant	ce Price	Method of sale
		(Name of company)	(RM)/Unit	

17. Jika dihantar sendiri, nyatakan jenis kenderaan yang digunakan dan jumlah pekerja yang terlibat (16d):/ *If delivered by hand, specify type of vehicle used and no. of worker involved:* 

a. Jenis kenderaan/ *Type of Vehicle*: \_\_\_\_\_b. \_\_\_\_b. \_\_\_\_\_b.

18. Jika ianya diproses sendiri, apakah nama produk yang dikeluarkan:/*If it is processed itself, named the products* 

(a)	(b)	(c)
Nama produk/	Lokasi jualan/ Location	Harga jualan/ Price
Name of Products	(Pasar malam, pasar tanı,)	(RM/unit)
l		
<u>2</u>		
3		
4		
(d)	(e)	(f)
Kekerapan menjual	Jumlah pengeluaran	Jumlah jualan/bulan
hari/minggu	unit/bulan	(unit)
Selling Frequency	Total production	Total sales/ month
$(\alpha)$		
(g) Kos nombustan/ <i>Manu</i>	facturing cost	
(DM/unit)	Jaciuring cosi	
(KIVI/UIIII)		
Penglibatan pendudu	k dalam aktiviti eko-pelancong	an
Local involvement in ec	otourism activities	
Adakah saudara atau a	ahli keluarga terlibat dalam akti	viti pelancongan
Do you or a family meml	ber are involved in tourism activitie	S
a) Restoran	b) Chalet c)]	Homestav
d) Kedai runcit/Grocer	ry e)Pemandu bot/ Boatman	1
f) Pemandu pelancong	f tourouide	•
g) Lain-lain (nyatakan)	) Others	
g) Lant-lant (nyatakan)	Journal	
Adakah terdapat perh	ezaan dari segi pendapatan isiru	mah nada tahun 80
an horbanding solverer	of Is there a difference in terms of	household income in the
than it is now	ig 15 intere a difference in terms of	nousenoiu income in the
al nendanatan menin	okat Income increase %	
ar. perioapatan mening	$g_{\alpha}$	
az. penuapatan menur	fun, income uecrease %	
a3. pendapatan tidak t	berubah, no changes	
	1 111 1 1 1	1 1.
Adakah berhasrat mer	ceburi bidang yang bersangkuta	an dengan sektor
sokongan kepada sekt	or pelancongan (spt: berniaga ke	ecilan, mengusahakan
homestay, pemandu p	elancong & pembekal)/ Do inter	id to venture into the field

H)

1.

2.

3.

related to the support for the tourism sector (eg: business scale, doing homestays, guides & suppliers)a) Ya/ Yesb) Tidak/ No

- Faktor penghalang (jika berkaitan)/ *Restraining factors* a1. masalah modal/ *capital problems* a2. masalah peluang/ *Chances* a3. Lain-lain (nyatakan)Others \_\_\_\_\_\_
- 5. Komen dan cadangan: Kaedah untuk membantu meningkatkan sosio-ekonomi penduduk melalui pembangunan eko-pelancongan sekitar Taman Negara. *Comments and suggestions: Methods to help improve the socio-economic population through the development of eco-tourism around National Park.*

#### I) Pengusaha Tanaman Kontan/ Cash crop/agriculture/ Farming

- 1. Tahun mulai menjadi peladang / Since when become farmer= 19\_\_\_
- 2. Jenis Tanaman/ type of crops 1= Lada/ Chili 2=Jagung/corn 3=Terong / eggplants 4= Lain-lain/others:\_\_\_\_\_
- 3. Purata keluaran sehari / Average products per day (kg)=\_
- 4. Purata harga keluaran sehari/*Av. product price per day* (RM) 1Kg =\_\_\_\_\_
- 5. Purata hari kerja sebulan/ *Average working days per month* =\_\_\_\_\_
- 6. Kos tetap/ *Fixed cost* 
  - a1. (Water pump) Harga dibeli(Price) RM\_\_\_\_
  - a2.Jangka umur/life span\_\_\_tahun/Year
  - b1. (Power spray) Harga dibeli(Price) RM\_\_\_\_
  - b2.Jangka umur/life span\_\_\_tahun/Year
  - c1. (Pam galas) Harga dibeli(Price) RM\_\_\_\_
  - c2.Jangka umur/life span\_\_\_tahun/Year
  - d1. (Kayu 'penyokong)Harga dibeli(Price) RM\_\_\_\_
  - d2.Jangka umur/life span\_\_\_tahun/Year
  - e1. (Lain -lain) Harga dibeli(Price) RM\_\_\_\_
  - e2.Jangka umur/life span\_\_\_\_tahun/Year
- 7. Kos semasa / Current cost
  - a. (Upah membajak) Belanja/musimRM\_\_\_\_\_ (Plowing)
  - b. (Petrol) Belanja sehari RM\_\_\_\_\_ (Petrol)
  - b. (Upah pekerja) Belanja sehari RM\_\_\_\_\_ (workers wages)
  - c. (Racun) Belanja sebulan RM\_\_\_\_\_ (pesticides)
  - d. (Benih) RM\_\_\_\_\_(Seeds)
  - e. (Lain-lain) RM\_\_\_\_ (Others)

## J) Pesawah Padi / Paddy farmer

1.	Jenis pesawah/ <i>Type of farmer</i> 1a=Tanah sendiri/ <i>Own land</i> 1b=Tanah sewa/pajakan/ <i>Rented land</i>					
2	Luss kawasan dikoriakan / Total area of land = okar / acro					
2.	Borana tahun sudah horsawah / Horn manu yars inzulza = tahun					
J. 4	Subsidi ditarima 2012 / Subsidias recreized=					
4. E	Subsidi diterinia 2013/ Subsidies recreibed—					
5.	Keluaran musim 2013/ Production per seuson– kg/ tan					
6.	Kos operasi satu musim/ Operation cost per season					
	a. Sewa/Pajak / rent or lease per season RM					
	b. Upah membajak/ plower wages (mesin-3 kali) RM					
	c. Beli benih/seeds/ bag xbag RM					
	d. Beli racun rumput/herbacideRM/liter x liter RM					
	e. Beli racun serangga/ <i>pesticides</i> RM					
	f. Beli baja (tambahan)/ fertilizer RM					
	g. Upah menuai/ harvester wages per day RM					
	h. Lain-lain/ Others RM					
7.	Anggaran pendapatan/ Estimated income					
	a. Harga jualan / <i>Sales price</i> RM/tan					
K)	Penoreh getah/ Rubber tapper					
1.	Jenis pesawah/Type of farmer					
1a=Tai	nah sendiri/ Own land1b=Tanah sewa/pajakan/ Rented land					
2.	Luas kawasan dikerjakan/ Total area of land =ekar/ acre					
3.	Berapa tahun sudah bersawah/ How many years involve =tahun					
4.	Subsidi diterima 2013/ Subsidies recreived=					
5.	Keluaran musim 2013/ Production per season= kg/tan					
6.	Kos operasi satu musim/ Operation cost per season					
	a. Sewa/Pajak / rent or lease per season RM					
	b. Upah membajak/ plower wages (mesin-3 kali) RM					
	c. Beli benih/seeds/bag xbag RM					
	d. Beli racun rumput/herbacideRM/liter x liter RM					
	e. Beli racun serangga/pesticides RM					
	t. Beli baja (tambahan)/ tertilizer RM					
	g. Upah menuai/ harvester wages per day RM					
	h. Lain-lain/ Others RM					
7						

Harga jualan / Sales price RM\_\_\_\_/tan

#### L) Pengusaha Ladang Kelapa Sawit

- 1. Luas kawasan dikerjakan/ *Total area of land* = \_\_\_\_\_ekar/ *acre*
- 2. Berapa tahun sudah bersawah/ *How many years involve* =\_\_\_\_tahun/*Years*
- 3. Hasil keluaran2013 / *Production* 2013=\_\_\_\_\_tan/bulan
- 4. Hasil diterima 2013/ revenue 2013 =RM\_\_\_\_/tan
- 6. a. Kos penanaman (penyediaan tanah & anak pokok) = RM\_\_\_\_\_ Cultivation cost (Land preparations and seedling)
  - b. Tahun ditanam/ *planted year*
- 7. Kos operasi purata 2013/ Operation cost 2013
  - Merumput/*weeding* RM\_\_\_\_\_ a. Beli racun/ pesticides b. RM\_\_\_\_\_ c. Meracun/ cost positioning RM Beli baja/ fertilizer d. RM Membaja/ cost fertilizing RM e. Memetik buah / Picking fruit f. RM Mengangkut hasil/ Transportation of fruit RM g. Lain-lain/ others h. RM Subsidi diterima 2013/ subsidies received 2013 = RM\_

#### M) Pengusaha dusun/ Orchard

8.

- (i) Dalam kawasan hutan simpan/ Forest reserve land
- (ii) Luar kawasan hutan simpan/ Outside forest reserve
- 1. Jenis spesis tanaman & harga jual (RM/kg)- *Type of species and sales price*

		RM	kg ,	RM	kg
		RM	kg ,	RM	kg
		RM	kg,	RM	kg
		RM	kg,	RM	kg
		RM	kg,	RM	kg
2.	Kos operas	si satu musim/ Operation	cost per season		
	a. Ba	yaran permit/ <i>permit fee</i>		RM/	musim
	b. Al	atan kerja/ Tools		RM	
	c. Be	li racun rumput / Herbed	cides RM/liter x	liter RM	
	d. Beli racun serangga/ Pesticides			RM	
	e. Beli baja (tambahan)/ Fertilizer			RM	
	g. La	in-lain/ Others		RM	
3.	Anggaran	pendapatan/ Estimated	income		

- a. Harga jualan RM \_\_\_\_\_/kg (*Price sales*)
- b. Anggaran hasil\_\_\_\_\_/kg semusim (*Estimated Product per season*)
| Λ  | Ionic kondoraan | yang digunakan | time of richicle .     |
|----|-----------------|----------------|------------------------|
| 4. | Jerns Kenueraan | yang ugunakan/ | <i>iype of venicle</i> |

- 5. Lokasi pengambilan hasil/ Location
  - *a)* Tempat (nyatakan):\_\_\_\_\_\_ (*Specify name of place*)
  - b) Jarak dari tempat tinggal \_\_\_\_\_ km (*Distance from home*)
- 6. Pekerja yang terlibat untuk satu-satu trip/ No. Of workers per trips \_\_\_\_\_orang/person a. Ahli keluarga/family members b. Bukan ahli keluarga/non-family members\_\_\_\_\_\_orang/person
- 7. Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip: If non-family members, how much is their wages per trip RM \_\_\_\_\_ / seorang/person

#### N) Nelayan Tasik/Sungai

- 1. Jenis spesis tangkapan & harga jual (RM/kg) /Species of catches and Price if sell \_\_\_\_\_\_ RM \_\_\_\_\_ kg , \_\_\_\_\_ RM \_\_\_\_\_ kg \_\_\_\_\_\_ RM \_\_\_\_\_ kg , \_\_\_\_\_ RM \_\_\_\_\_ kg \_\_\_\_\_ RM \_\_\_\_\_ kg , \_\_\_\_\_ RM \_\_\_\_ kg \_\_\_\_\_\_ RM \_\_\_\_\_ kg , \_\_\_\_\_\_ RM \_\_\_\_\_ kg \_\_\_\_\_\_ RM \_\_\_\_\_ kg , \_\_\_\_\_ RM \_\_\_\_\_ kg \_\_\_\_\_\_RM \_\_\_\_\_ kg , \_\_\_\_\_\_RM \_\_\_\_\_ kg \_\_\_\_\_ RM \_\_\_\_\_ kg , \_\_\_\_\_ RM \_\_\_\_\_ kg 2. Jenis alat tangkapan yang digunakan/ *Type of tools used*

a) Selambau b). Pukat, jenis (nyatakan)\_\_\_\_\_ d). Pancing c.) Jala e) Lain-lain \_\_\_\_\_ (nyatakan)

#### 3. Kos alatan / Cost of tools

a.	Selambau termasuk rumah	/ pondok (selambau include floating hunt)
	a1. harga bina RM	a2. jangka umur thn
	(Building cost)	(Lifespan)
b.	Pukat/ <i>trawl</i> b1. harga beli	(Price) RM

b2. Jangka umur (*Lifespan*)\_\_\_\_\_ bulan @ tahun c1. harga beli (*Price*)RM \_\_\_\_\_ Jala/*net* c. c2. jangka umur (*Lifespan*) \_\_\_\_\_\_ bulan @ tahun

		d. Pancin (Fishing ro	ng od)	d1. harga beli( <i>price</i> ) RM d2. jangka umur( <i>Lifespan</i> )	bulan @ tahun
	4.	Jumlah peng (Number of ca	ambila atches)	n hasil kg/tri	p/bulan
	5. 6.	Jenis kender ( <i>Mode of tran</i> Lokasi penga a. Tempat ( <i>Location</i> (	aan ya sportati ambila Htn. Si PRF/St	ng digunakan : ion) n hasil (Fishing location) mpan, Tnh. Kerajaan atau Hakmi ateland/Alienated land)	 lik):
		b. Jarak dar (Distance	i tempa from ho	at tinggal km buse)	L
	7. E	Bilangan peke 1. Ahli kelua 2. Bukan ahl	rja yan Irga (Fa i kelua	g terlibat untuk satu trip (Number mily) rga (Non-family)	of workers per trip) orang orang
8.	Jik (If	a bukan ahli l <i>non-family, ho</i> RM	keluarg w much	ga berapakah upah yang dibayar u 1 the wages per trip) / seorang (person)	ıntuk satu-satu trip:
9.	Jar (Fi	ngkamasa ker <i>shing duration</i> 1. Keluar me 2. Balik ( <i>Tim</i>	ja ketik 1 <i>per trij</i> 2 nangka 2 end) (	ta pengambilan hasil (untuk setiaj v) ap ikan ( <i>Time start)</i> (jam) jam)	o trip)
O)	)	SUMBER- SEMUA A AHLI-AHI (Average h	SUMI HLI LI YA ouseh	BER PENDAPATAN PUR ISIRUMAH (IAITU SEMU) NG TINGGAL BERSAMA S old monthly income sources	ATA BULANAN A PENDAPATAN SAHAJA). )
		Pendapatan (Cash incom	Tunai e)	<b>Purata Pendapat</b> (Average monthly	an Sebulan Bagi 2013 1 income for 2013)
1.		Makan gaji (Received Salary)	(a) (b) (c) (d) (e) (f)	Kerja resort ( <i>Resort</i> ) RM Pekerja kilang lain ( <i>Factory</i> )RM Kakitangan kerajaan ( <i>Gov</i> )RM Kakitangan swasta ( <i>Private</i> )RM_ Pekerja kontrak ( <i>Contract</i> ) RM Lain-lain ( <i>Others</i> ) RM	_Sebulan/month Sebulan Sebulan Sebulan Sebulan
2.		Hasil jualan/ kerja sendiri	/ (a) (b)	Mencari hasil hutan (forest resour Jualan hasil kraftangan (handcraf	<i>ces)</i> RMSebulan t)RMSebulan

Bussines

- *les* (c) Pengusaha chalet (*Chalet operator*) RM \_\_\_\_\_sebulan
  - (d) Pengusaha homestay (homestay operator RM\_\_\_sebulan
  - (e) Pemandu bot(Boatman) RM \_\_\_\_\_sebulan
  - (f) Pemandu pelancong (tourguide)RM\_\_\_\_\_sebulan
  - (g) Kedai runcit/makan(grocery/restaurant)RM\_\_\_sebulan
  - (h) Berniaga (bussines) RM\_\_\_\_\_sebulan
  - (i) Lain-lain (others) RM\_\_\_\_\_Sebulan
- 3. Hasil Pertanian (setelah tolak kos)

*Agriculture* (a) Penanam tanaman kontan (*cashcrop*)RM\_\_\_\_Sebulan

- (b) Tanaman padi (*paddy*)RM\_\_\_\_\_Sebulan
- (c) Penoreh getah (*rubber tapper*)RM\_\_\_\_\_Sebulan
- (d) Pengusaha kelapa sawit (*oilpalm*)RM\_\_\_\_\_Sebulan
- (e) Hasil dusun(orchard) RM\_\_\_\_\_Sebulan
- (f) Menghasil ikan (fisherman)RM\_\_\_\_\_Sebulan
- (g) Hasil ternakan(*cattles*)RM\_\_\_\_\_Sebulan
- (h) Lain-lain(others) RM\_\_\_\_\_Sebulan
- 4. Kiriman wang oleh ahli keluarga yang bekerja di tempat lain. (*Remittances from family members*) RM\_\_\_\_\_Sebulan/*Month*
- Lain-lain pendapatan (berniaga, bonus, sewa, faedah dan lain-lain) (Others income sources (bussiness, bonus, rent, interest, etc.) RM\_\_\_\_\_Sebulan/Month

#### Pendapatan Bukan Tunai. (Inkind income)

- 6. Makanan ikan / udang / ketam yang dihasilkanRM \_\_\_\_\_\_ *Food catches (fish, shrimp, crab)*(Nilai wang jika beli di pasar tolak kos) / *Price if we sale, deducted cost*
- 7. Makanan dari hasil tanaman / ternakan RM \_\_\_\_\_\_
  (*Food from rearing/ own farm*)
  (Nilai wang jika beli di pasar tolak kos) / *Price if we sale, deducted cost*
- 8. Tinggal di rumah sendiri (*Live own house*) RM \_\_\_\_\_\_ (Nilai bulanan jika di sewa)/*Value if rented*
- Guna air bukit/perigi (*well/hill water supply*) RM \_\_\_\_\_
   (Nilai wang jika guna saluran paip kerajaan)/price if piped
   (2-4 orang =RM10, 5-8=RM15, >8=RM20)

10. Lain-lain(*others*)

# P) Pemilikan Harta Isirumah (household property ownership)

- (1) Kereta/Car
- (2) Motorsikal/*Motocycle*
- (3) Radio
- (4) T.V
- (5) Video
- (6) Astro
- (7) Peti sejuk/*Referigerator*
- (8) Mesin basuh/ washing machine
- (9) Telefon/*telephone*
- (10) Telefon bimbit/ *handphone*
- (11) Kipas eletrik/electric fan
- (12) Bot/boat

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# Note 7 – Using SPSS software 1.0 GETTING STARTED WITH SPSS

The SPSS package is a powerful and user-friendly statistical analysis tool. It provides a simple point and click or drag interface for statistical analysis. It has a DATA EDITOR, which is a spreadsheet that allows you to enter data easily. Statistical analysis results are displayed in the OUTPUT window and tables and charts can be copied and paste easily into other programs such as Word or Power-point for documents and presentations.

To start SPSS, left click on the **Star**t button (at the lower left corner), select **Programs**, **SPSS for Windows** and **SPSS 18.0 for Windows**.

The SPSS windows dialogue appears and provides a list of tasks that you can do.By default, the task is set as "Opening an existing data source".



Click on the **OK** button and the Open Data dialogue box appears and provides a list of available SPSS data sets in the SPSS folder.

Select required data example the "TRAINING " from the list of SPSS files and click on the **Open** button. If the data is save in SPSS format, it will appear extension ".sav".

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# The **DATA EDITOR** and the **OUTPUT** windows will appear. Select the **DATA**

# EDITOR window.

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At the top right corner of the DATA EDITOR window, there are three buttons for the following tasks:

Minimize	Left button with a dash (-)
Maximize	Middle button with a square $(\Box)$
Close	Right button with a cross ( <b>x</b> )

Maximize the data window by clicking on the middle button with a square.



You can now get a full view of the data in the Employee data file.

SPSS data files are saved with the extension ".sav'

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The SPSS main windows are listed below:

Data Editor	A spreadsheet for defining variables, entering and editing
	data.
Output Viewer	Displays statistical results, tables and charts.
	Output can be saved as an output file for later use.
	Output can be copied and paste into other programs such as
	Word and Power-point.
Pivot Table Editor	Output displayed in tables can be edited. Rows and column
	can be interchanged.
Chart Editor	Charts can be edited. Allows changes such as colour, font and
	chart types.
Text Output Editor	Allows text in output viewer to be edited.
Syntax Editor	Allows saving SPSS syntax and running syntax commands
- )	during an SPSS session.
Script Editor	Allows advanced users to customize and automate SPSS tasks
1	by creating and modifying scripts within the program.

The DATA EDITOR allows you to define variables, enter or edit data easily.

At the left bottom corner of the **DATA EDITOR** window, there are the **Data View** and the **Variable View** tabs.

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Click on the **Variable View** tab and information such as variable name, type, label and declaration of missing values are displayed.

Edit	<u>V</u> iew <u>D</u> ata	Transform A	Analyze Dire	ct <u>M</u> arketing	Graphs Utilities	s Add- <u>o</u> ns	Window Help					
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5		Numeric	9	0	Tangkap Ikan	{1, Ya}	ne	8	≡ Right	🚓 Nominal	J ut	
6		Numeric		0	Memburu	/1 Val		8	·≡ Right	& Nominal		
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alla	DIC	Nume	Variat	le	Rotan	v al la	idie	8	電 Right	a van	able	
Nan	1e	Nume			Air Pertanian	Val	ue	8	· ਂ Right	Mea	sure	
		Nume	Type		Krafttangan			8	III Right	2		
11	A8	Numeric		0	Buah Hutan	{1, Ya}	None	8	· i Right	\delta Nominal	🔪 Input	
12	A9	Numeric	8	0	Buluh	{1, Ya}	None	8	I Right	\delta Nominal	🦒 Input	
13	A10	Numeric	8	0	Madu	{1, Ya}	None	8	·≡ Right	🚓 Nominal	🖒 Input	
14	A11	String	50	0	Lain-lain	None	None	8	≣ Left	🗞 Nominal	🖒 Input	
15	B1	Numeric	8	0	Hasil Hutan Kur	. {1, Ya}	None	8	·≡ Right	🚓 Nominal	🦒 Input	
16	B2	Numeric	8	0	Kurang Tanah	{1, Ya}	None	8	理 Right	\delta Nominal	🖒 Input	
17	B3	Numeric	8	0	Kurang Pekerja	{1, Ya}	None	8	ः≣ Right	🚓 Nominal	🦒 Input	
18	B4	Numeric	8	0	Penyakit Tana	{1, Ya}	None	8	≡ Right	💑 Nominal	🔪 Input	
19	B5	Numeric	8	0	Hasil Susah Di	{1, Ya}	None	8	≡ Right	Nominal	🦒 Input	
20	B6	Numeric	8	0	Masalah Penga	{1, Ya}	None	8	≡ Right	💑 Nominal	🔪 Input	
21	B7	Numeric	8	0	Larangan Pung	{1, Ya}	None	8	≡ Right	🚓 Nominal	🦒 Input	
22	B8	String	50	0	Lain-lain	None	None	8	≣E Left	🚓 Nominal	🔪 Input	
23	C1	Numeric	8	0	Kewujudan Ta	{1, Ya}	None	8	≡ Right	🚓 Nominal	🦒 Input	
24	C21a	Numeric	8	0	Tambah Penda	{1, Ya}	None	8	≡ Right	🚓 Nominal	🔪 Input	
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Click on the **Data View** tab to return to the **DATA EDITOR** Window.

The File menu in DATA EDITOR has a list of tasks such as creating New (Data, Syntax, Output or Script), Open (Data, Syntax, Output or Script), Close, Save, Save As (to different location), Export to Database (dBase, Excel or MS Access), and listing of Recently Used Data or Recently Used Files.

TRAINING.	sav [DataSet1]	PASW Statisti	cs Data Ed	tor								
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🗞 Export to	Database			0	Herba	{1, Ya}	None	8	I Right	\delta Nominal	S Input	
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<u>R</u> eposit	ory		•	0	Hasil Hutan Kur	{1, Ya}	None	8	Right	🙈 Nominal	🔪 Input	
🙇 Print Pre	eview			0	Kurang Tanah	{1, Ya}	None	8	·≡ Right	🗞 Nominal	🦒 Input	
Ӓ Print		Ctrl+P		0	Kurang Pekerja	{1, Ya}	None	8	Right	\delta Nominal	🔪 Input	
Recently	v Used Data		+	0	Penyakit Tana	{1, Ya}	None	8	·≡ Right	🗞 Nominal	🔪 Input	
Recently	v Used Files			0	Hasil Susah Di	{1, Ya}	None	8	I Right	🙈 Nominal	🔪 Input	
Evit	, <u>-</u>			0	Masalah Penga	{1, Ya}	None	8	I Right	\delta Nominal	🔪 Input	
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22	B8	String	50	0	Lain-lain	None	None	8	≣≣ Left	\delta Nominal	🔪 Input	
23	C1	Numeric	8	0	Kewujudan Ta	{1, Ya}	None	8	≡ Right	🚓 Nominal	💊 Input	
24	C21a	Numeric	8	0	Tambah Penda	{1, Ya}	None	8	I Right	🚴 Nominal	🔪 Input	
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Data View	Variable View											
New											PAS	W Statistics Processor is ready

The Edit menu provides tasks such as Cut, Copy, Paste, Clear, Insert Cases, Insert Variable, Find (to find data for a particular variable), Go to Case (to locate certain Case Numbers or observations) and Options (to change default settings)

TRAI	NING.sav [Data	Set1] -	PASW Statistic	s Data Ec	ditor				-					
File	Edit <u>V</u> iew [	<u>D</u> ata	Transform /	Analyze	Direct Marketing	Graphs Utilities	s Add- <u>o</u> ns	<u>W</u> indow <u>H</u> elp						1
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	A Class		Delete	0	0	Tanahan Cucuk 1	{1, 1 dj	None	0	-= Right	Neminal	s input		
			Delete	0	0	Momburu	{1, Taj	None	0	= Right	Nominal	s input		
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-	🐴 Find Next		F3	8	0	Kraftangan	(1, 1 aj (1, Va)	None	8	= Right	Nominal	> Input		
	😤 Replace		Ctrl+H	0	0	Ruah Hutan	(1, 1 aj	None	9	-E Right	Nominal	> Input		
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		aute		50	0	l ain-lain	None	None	8	≕ Left	& Nominal	> Input		
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	🥑 Optio <u>n</u> s			8	0	Kurang Tanah	/1 Yal	None	8	= Right	& Nominal	> Input		1
17	B3		Numeric	8	0	Kurang Pekeria	{1 Ya}	None	8	= Right	Nominal	> Input		1
18	B4		Numeric	8	0	Penyakit Tana	{1 Ya}	None	8	= Right	& Nominal	> Input		1
19	85		Numeric	8	0	Hasil Susah Di	{1 Ya}	None	8	I Right	Nominal	> Input		1
20	B6		Numeric	8	0	Masalah Penga	{1. Ya}	None	8	I Right	& Nominal	> Input		1
21	B7		Numeric	8	0	Larangan Pung	{1. Ya}	None	8	≡ Right	Nominal	> Input		1
22	B8		String	50	0	Lain-lain	None	None	8	≣≣ Left	Nominal	> Input		1
23	C1		Numeric	8	0	Kewujudan Ta	{1. Ya}	None	8	≡ Right	Nominal	> Input		1
24	C21a		Numeric	8	0	Tambah Penda	{1. Ya}	None	8	≡ Right	Nominal	> Input		1
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Data	/iew Variable	View												
Edit												PAS	W Statistics Processor is ready	1

The **View** menu allows changing the **font** style, remove grid lines and display **variables** or **value labels** for coded variables (such as f = Female, m = Male).

TRAININ	G.sav (Da	ataSet1] -	PASW Statist	tics Data Edit	tor									
ile <u>E</u> dit	View	<u>D</u> ata	Transform	<u>A</u> nalyze	Direc	t <u>M</u> arketing	<u>G</u> raphs <u>U</u> tilities	s Add- <u>o</u> ns	Window Help					
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1		Fonts				00000	nah	None	None	10	≣ Left	💑 Nominal	> Input	
2		- Grid Line				0	ID Sampel	None	None	8	≔≣ Right	Scale	S Input	
3		A Velue Le	in a la			0	Nama Kampung	{1, Kg Kual	. None	10	≔ Right	Nominal	S Input	
4	11	<u>v</u> alue La	ideis			0	Tanah Cucuk T	{1, Ya}	None	8	≔≣ Right	Nominal	S Input	
5		Mar <u>k</u> Imp	outed Data			0	Tangkap Ikan	{1, Ya}	None	8	≡ Right	Nominal	S Input	
6	2	Customi	ze Variable \	view		0	Memburu	{1, Ya}	None	8	= Right	Nominal	> Input	
7	業	D <u>a</u> ta		Ctrl+T		0	Herba	{1, Ya}	None	8	≡ Right	Nominal	S Input	
8	~~		Numeric	v	_	0	Rotan	{1, Ya}	None	8	:≣ Right	💑 Nominal	S Input	
9	A6		Numeric	8		0	Air Pertanian	{1, Ya}	None	8	·≣ Right	💑 Nominal	> Input	
10	A7		Numeric	8		0	Krafttangan	{1, Ya}	None	8	:≣ Right	💑 Nominal	S Input	
11	A8		Numeric	8		0	Buah Hutan	{1, Ya}	None	8	·≣ Right	💑 Nominal	S Input	
12	A9		Numeric	8		0	Buluh	{1, Ya}	None	8	I Right	💑 Nominal	S Input	
13	A10		Numeric	8		0	Madu	{1, Ya}	None	8	·圖 Right	🗞 Nominal	> Input	
14	A11		String	50		0	Lain-lain	None	None	8	≣E Left	💑 Nominal	S Input	
15	B1		Numeric	8		0	Hasil Hutan Kur	. {1, Ya}	None	8	·圖 Right	🗞 Nominal	💊 Input	
16	B2		Numeric	8		0	Kurang Tanah	{1, Ya}	None	8	I Right	🗞 Nominal	S Input	
17	B3		Numeric	8		0	Kurang Pekerja	{1, Ya}	None	8	) I Right	🙈 Nominal	S Input	
18	B4		Numeric	8		0	Penyakit Tana	{1, Ya}	None	8	IIII Right	🙈 Nominal	🔪 Input	
19	B5		Numeric	8		0	Hasil Susah Di	{1, Ya}	None	8	·圖 Right	🙈 Nominal	ゝ Input	
20	B6		Numeric	8		0	Masalah Penga	{1, Ya}	None	8	III Right	\delta Nominal	🔪 Input	
21	B7		Numeric	8		0	Larangan Pung	{1, Ya}	None	8	·圖 Right	\delta Nominal	🔪 Input	
22	B8		String	50		0	Lain-lain	None	None	8	≣≣ Left	\delta Nominal	🔪 Input	
23	C1		Numeric	8		0	Kewujudan Ta	{1, Ya}	None	8	·≣ Right	\delta Nominal	💊 Input	
24	C21a		Numeric	8		0	Tambah Penda	{1, Ya}	None	8	ः≣ Right	💑 Nominal	🦒 Input	
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Data View	Variat	ble View												
Toolbars													PA	SW Statistics Processor is ready

The **Data** menu provides a list of tasks such as **Copy Data Properties** (copy selected variable and data from other data sets), **Sort Cases**, **Merge Files**, **Split File** and **Select** Cases.

TRAINING	.sav [Dat	aSet1] -	PASW Statistics	Data Editor			and the second second								i x
<u>File</u> Edit	View	Data	Transform Ar	nalyze Dii	rect <u>M</u> arke	ting	Graphs Utilities	s Add- <u>o</u> ns	Window Help						
		😡 De	efine <u>V</u> ariable Pr	operties			111		- 4	(	ð 🌒 🤞	ABC			
	N		ow Custom Attrik	huto		als	Label	Values	Missing	Columns	Align	Measure	Role		
1	Pener		ew custom Aung				Penemuramah	None	None	10	≣≣ Left	\delta Nominal	🔪 Input		-
2	Samp		enne Dates				ID Sampel	None	None	8	III Right	🛷 Scale	ゝ Input		
3	Kamp	E De	efine <u>M</u> ultiple Re	sponse Se	ts		Nama Kampung	{1, Kg Kual	. None	10	🗏 Right	\delta Nominal	🔪 Input		
4	A1	Va	alidation		•		Tanah Cucuk T	{1, Ya}	None	8	III Right	\delta Nominal	ゝ Input		
5	A2	🔡 Id	entify Duplicate (	Cases			Tangkap Ikan	{1, Ya}	None	8	🗏 Right	\delta Nominal	🔪 Input		
6	A3	🛄 [d	entify Unusual C	ases			Memburu	{1, Ya}	None	8	III Right	\delta Nominal	ゝ Input		
7	A4	🔊 So	ort Cases				Herba	{1, Ya}	None	8	🗐 Right	🙈 Nominal	🔪 Input		
8	A5		- nt Variables				Rotan	{1, Ya}	None	8	III Right	\delta Nominal	ゝ Input		
9	A6	T					Air Pertanian	{1, Ya}	None	8	🗐 Right	\delta Nominal	🔪 Input		
10	A7		Tra <u>n</u> spose <u>R</u> estructure				Krafttangan	{1, Ya}	None	8	·圖 Right	🙈 Nominal	🔪 Input		
11	A8	R	estructure				Buah Hutan	{1. Ya}	None	8	🗐 Right	\delta Nominal	🔪 Input		
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15	B1	🔣 Co	opy <u>D</u> ataset				Hasil Hutan Kur	. {1, Ya}	None	8	🗐 Right	\delta Nominal	🔪 Input		
16	B2	Sr	olit File				Kurang Tanah	{1, Ya}	None	8	III Right	\delta Nominal	ゝ Input		
17	B3		alact Cases				Kurang Pekerja	{1, Ya}	None	8	🗐 Right	\delta Nominal	🔪 Input		
18	B4	ath un					Penyakit Tana	{1, Ya}	None	8	III Right	\delta Nominal	ゝ Input		
19	B5	• • <u>vv</u>	eight Cases				Hasil Susah Di	{1, Ya}	None	8	🗐 Right	\delta Nominal	🔪 Input		
20	B6		Numeric	8	0		Masalah Penga	. {1, Ya}	None	8	I Right	\delta Nominal	ゝ Input		
21	87		Numeric	8	0		Larangan Pung	{1, Ya}	None	8	I Right	\delta Nominal	🔪 Input		
22	B8		String	50	0		Lain-lain	None	None	8	≣≣ Left	\delta Nominal	ゝ Input		
23	C1		Numeric	8	0		Kewujudan Ta	{1, Ya}	None	8	I Right	\delta Nominal	🔪 Input		
24	C21a		Numeric	8	0		Tambah Penda	{1, Ya}	None	8	I Right	\delta Nominal	ゝ Input		
75	1		Numorio	0	0	-	Tambah Dakari	(1 Val	Mana	0	= Diaht	Nominal	S. Innut		
Data View	Mariahi														
Data view	variab	e view													
Merge Files													PAS	3W Statistics Processor is ready	

The **Transform** menu allows you to **Compute** (create new variables such as sum, ratio or log), **Recode**, **Automatic Recode** (recode several variables at once), **Visual Binning** (create bins for interval variables), **Rank Cases and Replace Missing Values**.

TRAINING	.sav [DataSet1] -	PASW Statistic	s Data Edito	or					-				
<u>F</u> ile <u>E</u> dit	<u>V</u> iew <u>D</u> ata	Transform	Analyze D	irect <u>M</u> arketin	g <u>G</u> raphs	Utilities	Add- <u>o</u> ns <u>\</u>	<u>N</u> indow <u>H</u> elp					
		Compute	Variable					🗖 📩 🧮			BS		
		Count Va	lues within	Cases		•					<u> </u>		
	Name	Shift Valu	Ies			bel	Values	Missing	Columns	Align	Measure	Role	
1	Penemuram.	- Recode i	into Same V	ariables		amah	None	None	10	≣E Left	💑 Nominal	> Input	
2	Sampel	- Recorde i	nto Differen	t\/orightee		əl	None	None	8	I Right	Scale Scale	> Input	
3	Kampung	Recode i	nto Dilleren	it variables		mpung	{1, Kg Kual	None	10	I Right	Nominal	> Input	
4	A1	Automati	c Recode			cuk T	{1, Ya}	None	8	·圖 Right	Nominal	> Input	
5	A2	🕨 Visual <u>B</u> i	nning			lkan	{1, Ya}	None	8	I Right	\delta Nominal	🔪 Input	
6	A3	🔀 Optimal B	Binning				{1, Ya}	None	8	III Right	🗞 Nominal	🔪 Input	
7	A4	Prepare I	Data for Mo	deling	•	S Inte	ractive		8	I Right	🗞 Nominal	🔪 Input	
8	A5	Rank Ca	ses			0 Aut	- matie		8	ः≣ Right	🙈 Nominal	ゝ Input	
9	A6					- <u></u>	ornauc		8	I Right	🙈 Nominal	ゝ Input	
10	A7	Date and	i rime wiza	ra		<u>₽</u> <u>B</u> ac	cktransform Sco	res	8	I Right	🙈 Nominal	ゝ Input	
11	A8	Create Ti	i <u>m</u> e Series.			an	{1, Ya}	None	8	≔ Right	\delta Nominal	🔪 Input	
12	A9	🐫 Replace	Missing <u>V</u> a	lues			{1, Ya}	None	8	ः≣ Right	💑 Nominal	🔪 Input	
13	A10	🍘 Random	Number G	enerators			{1, Ya}	None	8	≔ Right	\delta Nominal	🔪 Input	
14	A11	Run Pen	ding Transf	orms	Ctrl+G		None	None	8	≣≣ Left	💑 Nominal	🔪 Input	
15	B1	ivumeric	8	U	Hasii Hu	tan Kur	{1, Ya}	None	8	≔ Right	\delta Nominal	🔪 Input	
16	B2	Numeric	8	0	Kurang T	anah	{1, Ya}	None	8	ः≣ Right	💑 Nominal	🔪 Input	
17	B3	Numeric	8	0	Kurang F	Pekerja	{1, Ya}	None	8	·≣ Right	뤚 Nominal	🔪 Input	
18	B4	Numeric	8	0	Penyakit	Tana	{1, Ya}	None	8	ः≣ Right	\delta Nominal	🔪 Input	
19	B5	Numeric	8	0	Hasil Su	sah Di	{1, Ya}	None	8	:圖 Right	뤚 Nominal	🔪 Input	
20	B6	Numeric	8	0	Masalah	Penga	{1, Ya}	None	8	ः≣ Right	💑 Nominal	🔪 Input	
21	B7	Numeric	8	0	Larangar	Pung	{1, Ya}	None	8	≡ Right	뤚 Nominal	🔪 Input	
22	B8	String	50	0	Lain-lain		None	None	8	≣≣ Left	🙈 Nominal	S Input	
23	C1	Numeric	8	0	Kewujud	an Ta	{1, Ya}	None	8	≡ Right	뤚 Nominal	🔪 Input	
24	C21a	Numeric	8	0	Tambah	Penda	{1, Ya}	None	8	🗐 Right	🙈 Nominal	🔪 Input	
25	C216	Numorio	0	0	Tambah	Dakari	(1 Va)	Mana	0	I Dialet	Nominal	S. Innut	18
Data Missi													
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The **Analyze** menu provides a list of statistical analysis such as **Descriptive Statistics** (frequencies and cross-tabulations), **Compare Means** (Independent-Samples T-test, Paired-Samples T-test, ANOVA), **General Linear Model**, **Correlation**, **Regression** and **Non-parametric Tests**.

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The **Graph** menu enables you to create bar charts, pie charts, line charts, boxplots and histogram using **Chart Builder**, **Interactive** or **Legacy Dialogs**.

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The **Help** menu allows you to search information under **Topics**, learn more on how to use SPSS using **Tutorial**, **Case Studies** or **Statistics Coach**.

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# 2.0 CREATING SPSS DATA FILES

The **SPSS DATA EDITOR** is a spreadsheet that allows you to enter data easily. Click on the **File** menu, select **New** and **Data** and the **SPSS DATA EDITOR** window appears. The **Untitled1[DataSet]** at the top left corner indicates that this is a new file and no filename has been given.

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Click on **Variable View** tab to define the variables.

To define the first variable (*i.e.* gender), left click on the first column in the first row under the **Name** column and type in *gender*.

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	Name	Туре	Width	Decimals	Label	Values	Missing
1	gender	String	8	0	gender	{1, male}	None
2	age	Numeric	8	0	age	{1, 21-30 yrs}	None
3	education	Numeric	8	0	education attainment	{1, PhD}	None
4	Q1	Numeric	8	0	When you have a problem, the bank shows a sincere interest in solving it.	{1, very dissatisfied}	None
5	Q2	Numeric	8	0	Employees of bank solve your problems when they promise to do so.	{1, very dissatisfied}	None
6	Q3	Numeric	8	0	Employees of bank give you prompt service.	{1, very dissatisfied}	None
7	Q4	Numeric	8	0	Employees of bank are willing to help you.	{1, very dissatisfied}	None
8	Q5	Numeric	8	0	Employees of bank are never too busy to respond to your request.	{1, very dissatisfied}	None
9	Q6	Numeric	8	0	Banks give you individual and personal attention.	{1, very dissatisfied}	None
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Move the cursor using the left arrow  $\rightarrow$  on the keyboard to the **Type** column.

Since gender is coded as "1" and "2", it can be declared as *Numeric*. If gender is coded as "m' and "f" then you will need to select **String**. Use the default *Numeric* type and click on **OK**.

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We will use the default setting for **Width**.

In the **Decimals** columns, the default decimal place is 2. Decrease the decimal to **zero** as gender is a categorical variable and not measured on a continuous scale. Move the cursor using the left arrow  $\rightarrow$  on the keyboard to the **Label** column and type **gender**. Next, move the cursor using the left arrow  $\rightarrow$  on the keyboard to the **Values** column. Click on the small grey square button and the Value Labels dialogue window appears. Type *1* in the **Value** box. Next, type *male* in the **Label** box and click on **Add** button.

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Repeat and Type **2** in the Value box.

Then, type *female* in the Label box and click on Add and OK

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Name	Туре	Label	Values
gender	numeric	Gender	1=male
0			2=female
			1=21-30
age	numeric	Age	2=31-40
0		0	3=41-50
			4=above 50
			0=Tiada
1			1=Sek Ren
education	numeric	Education attainment	2=Sek Men
			3=Tgkt 6
			4=Kolej &U
A1	numeric	Land for agriculture	
A2	numeric	Fishing	
A3	numeric	Animal hunting	
A4	numeric	Herbs for medicine	1=Yes
A5	numeric	Rattan harvesting	0=No
A6	numeric	Water supply for agriculture	
A7	numeric	Forest resources for handcraft	
A8	numeric	Wildfruit harvesting	
A9	numeric	Bamboo harvesting	
A10	numeric	Honey harvesting	

Continue defining the other variables as listed below.

# 2.1 Defining Variables Rules

- Must begin with a letter
- Cannot end with a full stop or underscore
- Blanks, space and special characters (such as ?. ".!, \*) cannot be used.
- Duplication of variable names is not allowed.

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2	Age	Numeric	8	0	Age	{1, 21-30}	None	8	ा = Right	🛷 Scale	🖒 Input	
3	Education	Numeric	8	0	Education attainment	{0, Tiada}	None	8	≔ Right	I Scale	🔪 Input	
4	A1	Numeric	8	0	Land for agriculture	{0, No}	None	8	·≡ Right	🛷 Scale	🔪 Input	
5	A2	Numeric	8	0	Fishing	{0, No}	None	8	· i Right	🛷 Scale	💊 Input	
6	A3	Numeric	8	0	Animal hunting	{0, No}	None	8	理 Right	🛷 Scale	🔪 Input	
7	A4	Numeric	8	0	Herbs for medicine	{0, No}	None	8	≡ Right	🛷 Scale	🖒 Input	
8	A5	Numeric	8	0	Rattan harvesting	{0, No}	None	8	· i Right	🛷 Scale	🔪 Input	
9	A6	Numeric	8	0	Water supply for agricu	{0, No}	None	8	·≡ Right	🛷 Scale	🔪 Input	
10	A7	Numeric	8	0	Forest resources for ha	{0, No}	None	8	≡ Right	🛷 Scale	🖒 Input	
11	A8	Numeric	8	0	Wildfruit harvesting	{0, No}	None	8	理 Right	🛷 Scale	🔪 Input	
12	A9	Numeric	8	0	Bamboo harvesting	{0, No}	None	8	≡ Right	🛷 Scale	🖒 Input	
13	A10	Numeric	8	0	Honey harvesting	{0, No}	None	8	≔ Right	I Scale	🔪 Input	
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The **Variable View** window with all variables defined is shown below:

Click on the **Data View** button at the lower left corner to get back to **the DATA EDITOR** window.

Enter the data for the first five respondents as shown below:

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Click on the File menu and select Save As.

The Save Data As dialogue window appears

Under Save in, select the location (or folder) where you want to save your file by

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clicking on the down arrow  $\checkmark$ .

Type in *survey* in the **File name** box below the list of SPSS data files.

By default, the **Save As** type is SPSS (\*.sav) for SPSS data file.

In this example, the *survey.sav* data is saved in the **FRIM** folder.

# 2.2 Importing Excel Files

This section illustrates how to import Excel data files into SPSS.

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Go to the File menu, select Open and Data.

From the **Open Data** dialogue window, under **Look in**, click on the down arrow **▼** and select the folder **FRIM**.

Next, under **File of type**, click on the down arrow **▼** and select Excel (.\*xls).

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Select the WORKSHOP.xls data in Excel format and click Open.

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Click **OK** and the data appears in the **SPSS DATA EDITOR** window.

Click on the **File** menu, select **Save As**. In the **Save As In** dialogue window, under File name, type in *WORKSHOP1* and click **Save**.

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Repeat the whole process and import in the second Excel worksheet and save it as *WORKSHOP2*.

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This section illustrates how to merge three SPSS data file into one file.

Open the *WORKSHOP1* SPSS data file using File, Open Data. From the **Data** menu, select **Merge files** and **Add Cases**. In the dialogue window **Add cases to** *WORKSHOP1*, under **An Open data set**, select *WORKSHOP2* and click **Continue**. Note that you will have to click on the **An External SPSS data file** button and **Browse** to locate *WORKSHOP2* if it is not an open data set.

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In the **Add Cases** from *WORKSHOP2* dialogue window, make sure that all the variables are listed in the **Variables in Active data set** box. Click **OK** and the 73 observations in *WORKSHOP2* will be included into the WORKSHOP1 SPSS data set.

WORKSHO	P1.sav [DataSet9] - P	ASW Statistics Data	Editor												o x
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3	2	2	1		Add Cases	From Untitled2	[DataSet2]			2		2	2	2	
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5	1	3	0				A1(*)		4	2		2	2	2	
6	2	3	0	_			A10(*)			2		2	2	2	
/	1	1	2	_			A2(^)			2		2	2	2	
0	2	2	2				A4(*)			2		2	2	2	
10		2	2	_			P <u>a</u> ir A5(*)			2		2	2	2	
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	Gender	Age	Education	A1	A2	A3	A4	A5	A6	A7	A8	A9			
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2	1	1	3	2	2	2	2	2 2	2	2	2				
3	2	2	1	2	2	2	2	2 2	2	2	2				
4	2	2	2	2	2	2	2	2 2	2	2	2				
5	1	3	0	1	2	2	2	2 2	2	2	2				
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Click on **File**, select **Save As** and and type *WORKSHOP\_merge* in the **File Name** box. This SPSS data set contains observations from all three data sets.

# 3.0 DESCRIPTIVE STATISTICS AND CREATING CHARTS

Quantitative analysis should always start with some descriptive statistics and charts before moving on to inferential statistics which involves modeling and hypothesis testing. Simple descriptive statistics involve reporting the mean or median and standard deviation of continuous variables, and the frequency distribution and percentages for categorical variables. Charts are informative visual aids for summarizing results and makes report looks interesting.

#### 3.1 Descriptive Statistics

This section illutrates obtaining frequency distribution for catregorical variables and descriptive statistics for continuous variables using SPSS.

#### 3.1.1 Obtaining frequency distribution

Open the *orangasli.sav* file

Click on Analyze and select Descriptive Statistics and then Frequencies.

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Kg Sar	n Compare Means	<ul> <li>Explore</li> </ul>		k5	k6	k7	k8	r1	r2	r3	r4	k10	k11	var 🔺
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2 1	Generalized Linear Models	Ratio	2	1	1	1	0	0	0	0	0	0	2	
3 1	Mixed Models	P-P Plots	2	1	1	1	1	0	0	0	0	5	2	
4 1	Correlate	Q-Q Plots	2	1	1	1	1	0	Π	0	Π	5	2	
5 1	Regression	12	2	1	1	1	1	-	0	-	-	5	2	
6 1	Classify	15	2	1	1	1	2	- 1	0	0	0	- 4	2	
7 1	Data Reduction	17	1	1	1	1	- 2	1	0	0	0	4	2	
8 1	Scale	36	2	1	2	1	0	1	0	0	0	4	2	
9 1	Nonparametric Tests	37	1	1	2	1	1	1	4	3	0	3	1	
10 1	Time Series	2	2	1	1	1	0	0	0	0	0	0	2	
11 1	Survival	3	2	1	1	1	0	0	0	0	0	0	2	
12 1	Multiple Response	6	1	1	1	1	0	0	0	0	0	0	2	
13 1	Quality Control	19	2	1	2	1	1	0	0	0	0	6	2	
14 1	KOC COIVE	32	1	1	2	1	1	1	4	0	0	3	2	
15 1	Amos 7	1	2	1	1	1	0	0	0	0	0	0	2	
16 1	3 11 5	2	1	1	1	1	0	0	0	0	0	0	2	
17 1	3 8 5	5	1	1	1	1	0	0	0	0	0	0	2	
18 1	3 7 5	6	1	1	1	1	0	0	0	0	0	0	2	
19 1	3 5 3	16	1	1	1	1	2	1	0	0	0	4	1	
20 1	3 4 3	18	1	1	1	1	2	1	0	0	0	4	2	
21 1	3 3 3	20	1	1	1	1	2	1	0	0	0	4	1	
22 1	3 9 5	20	1	1	1	1	2	1	0	0	0	3	1	
23 1	3 10 2	20	2	1	2	1	2	1	0	0	0	4	2	
24 1	3 6 3	23	1	1	2	1	2	1	0	0	0	4	2	
25 1	3 2 2	52	2	1	2	1	0	0	0	0	0	6	2	
26 1	3 1 1	53	1	1	2	1	1	1	0	0	0	3	2	
27 1	4 4 3	1	2	1	1	4	0	0	0	0	0	0	2	
28 1	4 3 3	4	1	1	1	4	0	0	0	0	0	0	2	
29 1	4 2 2	20	2	1	2	4	0	1	0	0	0	4	2	
30 1	4 1 1	30	1	1	2	4	0	4	0	0	0	3	2	
31 1	5 7 3	1	1	1	1	1	0	0	0	0	0	0	2	
32 1	5 6 3	2	1	1	1	1	0	0	0	0	0	0	2	
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Frequencies						SPSS	Processor is re-	ady						

The **Frequencies** dialogue box appears. Select the variable *"Name of Village"* and click on the middle button ▶ to move it to the **Variable(s)** box.

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1	1	1	9	3	1	2		1	1	1	0	0	0	0	0	0	2	
2	1	1	-		~	-			1	1	0	0	0	0	0	0	2	
3	1	1	Frequenc	ies				×	1	1	1	0	0	0	0	5	2	
4	1	1	Comula ma	mher IC +	Va	riable(s):		OK	1	1	1	0	0	0	0	5	2	
5	1	1	A Hd membe	r lk11	1	Name of villa	ge (Kg)		1	1	1	0	0	0	0	5	2	
6	1	1	Relationshi	ip [k2]				Paste	1	1	2	1	0	0	0	4	2	
7	1	1	Nge [k3]					Reset	1	1	2	1	0	0	0	4	2	
8	1	1	Gender [k4	4]				Cancel	2	1	0	1	0	0	0	4	2	
9	1	1	Sub-ethnic	[k5]				Gandor	2	1	1	1	4	3	0	3	1	
10	1	2	Marital stat	US [K6]				Help	1	1	0	0	0	0	0	0	2	
11	1	2	A rational	·					1	1	U	U	U	0	U	U	2	
12	1	2	Display frequ	uency tables					1	1	0	U	U	U	U	U	2	
1.5	1	2							2	1	1	0	0	0	0	0	2	
14	1	2			Statistics	Charts	Format.		1	1			4	0	0		2	
16	1	3	11	5	2	1		1	1	1	0	0	0	0	0	0	2	
17	1	3	8	5	5	1		1	1	1	0	0	0	0	0	0	2	
18	1	3	7	5	6	. 1		1	1	1	0	0	0	0	0	0	2	
19	1	3	5	3	16	1		1	1	1	2	1	0	0	0	4	1	
20	1	3	4	3	18	1		1	1	1	2	1	0	0	0	4	2	
21	1	3	3	3	20	1		1	1	1	2	1	0	0	0	4	1	
22	1	3	9	5	20	1		1	1	1	2	1	0	0	0	3	1	
23	1	3	10	2	20	2		1	2	1	2	1	0	0	0	4	2	
24	1	3	6	3	23	1		1	2	1	2	1	0	0	0	4	2	
25	1	3	2	2	52	2		1	2	1	0	0	0	0	0	6	2	
26	1	3	1	1	53	1		1	2	1	1	1	0	0	0	3	2	
27	1	4	4	3	1	2		1	1	4	0	0	0	0	0	0	2	
28	1	4	3	3	4	1		1	1	4	0	0	0	0	0	0	2	
29	1	4	2	2	20	2		1	2	4	0	1	U	0	U	4	2	
30	1	4	1	1	30	1		1	2	4	U	4	U	U	U	3	2	
31	1	5	/	5	1	1		1	1	1	0	U	U	0	U	U	2	
32		5	6		2	2		1			0	U	0	0	0	U	2	
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										SPSS	rocessor is rea	idy						

# The SPSS output is shown below:

#### Statistics

Name of village

N	Valid	239
	Missing	0

			Kg		
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Sg Raba	78	32.6	32.6	32.6
	2 Sg Banun	39	16.3	16.3	49.0
	4 Desa Permai	52	21.8	21.8	70.7
	5 Desa Damai	42	17.6	17.6	88.3
	6 Ria	28	11.7	11.7	100.0
	Total	239	100.0	100.0	

Note that since there are no missing values the Percent and Valid Percent values are the same.

# 3.1.2 Descriptive statistics

Open the Employee Data.sav file

Click on Analyze and select Descriptive Statistics and then Descriptives.

In the **Descriptives** window, select teh variable '*salary*' and '*salbegin*' and move them into the **Variable(s)** box.

🔛 *Employe	e data.sav [D	ataSet4] - Si	PSS Data E	ditor													
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1 : id	1														v	isible: 10 of	10 Variables
	id	gender	h	date		educ	inhcat	salary	salbegin	inbtime	prevexp	minority	var	var	var	var	
1	1	Male		02/03/19	952	16	5 Manac	er \$57,0	00 \$27,000	98	144	No					-
2	2	Male		05/23/19	958	16	6 Clerio	al \$40,2	00 \$18,750	98	36	No	i				
3	3	Female		07/26/19	929	12	2 Cleric	al \$21,4	50 \$12,000	98	381	No					
4	4	Female		04/15/19	947	-		1 004.0	00 #40.000		190	No	Descript	ives: Optio	ns		
5	6	i Male		02/09/19	955	Descript	ives				38	No					
6	6	i Male		08/22/19	958			⊻a	riable(s):			No	✓ Mean	<u>S</u> ur	n		
7	7	Male		04/26/19	956	🛷 id		4	salary		14	No	Dispersion	n			
8	8	Female		05/06/19	966	odate 🗸		4	salbegin		ing	No	Std. dev	/iation 🗹 Mi	nimum		
9	9	Female		01/23/19	946	equc					15	No	Varianc	e 🗸 M	aximum		
10	10	l Female		02/13/19	946	jobtime		*			44	No	Range		– E mean		
11	11	Female		02/07/19	950	nevexp 🖉					43	No					
12	12	! Male		01/11/19	966	minority					26	Yes	Distributio	m			
13	13	l Male		07/17/19	960						34	Yes	<u>K</u> urtosis	s 🗌 Sk	e <u>w</u> ness		
14	14	Female		02/26/19	949						37	Yes	-Display Or	dor			
15	15	i Male		08/29/19	962	Save sta	ndardi <u>z</u> ed valu	es as variables			66	No					
16	16	i Male		11/17/19	964		ок	Paste R	eset Cancel	Help	24	No	Variable	e list			
17	17	Male		07/18/19	962	1.		ar <del>oro</del> jo	00		48	No	() <u>A</u> lphabe	etic			
18	18	l Male		03/20/19	956	16	6 Manag	er \$103,7	50 \$27,510	97	70	No	O Ascend	ling means			
19	19	l Male		08/19/19	962	12	2 Cleric	al \$42,3	00 \$14,250	97	103	No	O <u>D</u> escen	ding means			
20	20	l Female		01/23/19	940	12	2 Cleric	al \$26,2	50 \$11,550	97	48	No					
21	21	Female		02/19/19	963	16	6 Cleric	al \$38,8	50 \$15,000	97	17	No	Continue	Canc	el He	lp di	
22	22	! Male		09/24/19	940	12	2 Cleric	al \$21,7	50 \$12,750	97	315	Yes					
23	23	l Female		03/15/19	965	15	5 Cleric	al \$24,0	00 \$11,100	97	75	Yes					
24	24	Female		03/27/19	933	12	2 Cleric	al \$16,9	50 \$9,000	97	124	Yes					
25	25	i Female		07/01/19	942	15	5 Cleric	al \$21,1	50 \$9,000	97	171	Yes					
26	26	i Male		11/08/19	966	16	5 Cleric	al \$31,0	50 \$12,600	96	14	No					-
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Click on the **Options** tab and the **Descritive:Options** dialogue window appears.

By default the boxes for Mean, Std. Deviation, Minimum and Maximum are already

checked. Under **Distribution**, click on the **Skewness** and **Kurtosis** boxes.

Then, click **Continue** and **OK**.

The descriptive statistics results will appear in the OUTPUT window.

**Descriptive Statistics** 

	N	Minimum	Maximum	Mean	Std. Deviation	Skew	/ness	Kurt	osis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Current Salary	474	\$15,750	\$135,000	\$34,419.57	\$17,075.661	2.125	.112	5.378	.224
Beginning Salary	474	\$9,000	\$79,980	\$17,016.09	\$7,870.638	2.853	.112	12.390	.224
Valid N (listwise)	474								

# 3.2 Creating Pie Charts

Click on the **Charts** button. Select **Pie Chart**. Under Chart Value, then select *Percentage*.

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1 : Kg			1												Visible:	16 of 16 Vari	iables
í – E	Kg	Sam	k1 k2	k3	k4	1	k5	kб	k7	k8	r1	r2	r3	r4	k10	k11	var 🔺
1		x î	-		a l		1	1	1	0	0	0	0	0	0	2	
2	E Freq	uencies					1	1	1	0	0	0	0	0	0	2	
3	Same	ole number [S. 🔺	Variable	=[s]:	ОК		1	1	1	1	0	0	0	0	5	2	
4	🥜 Hd m	iember [k1]	💞 Na	me of village (Kg	) Reals		1	1	1	1	0	0	0	0	5	2	
5	Rela	tionship [k2]			Faste		1	1	1	1	U	U	0	0	5	2	
7	Age	[k3]			Rese	et	1	1	1	2	1	0	0	0	4	2	
	- Sub-	ter (K4) ethnic [k5]			Cance	el	1	2	1	2	1	0	0	0	4	2	
9	- 🔗 Marit	al status [k6]			Help		1	2	1	1	1	4	3	0	3	1	
10	nelig 🤣 Relig	ion [k7]					1	- 1	1	O	0	0	0	0	0	2	
11	- 1 <i>1</i> 9 mail						1	1	1	0	0	0	0	0	0	2	
12	🔽 Displa	y frequency tables					1	1	1	0	0	0	0	0	0	2	
13			Statistics	hate Ec	uma (		1	2	1	1	0	0	0	0	6	2	
14			Statistics		anna		1	2	1	1	1	4	0	0	3	2	
15	1	3	12	5	1	2	1	1	1	0	0	0	0	0	0	2	
16	1	3	11	5	2	1	1	1	1	0	0	0	0	0	0	2	
17	1	3	Frequenci	es: Charts		×		1	1	U	U	U	U	0	U	2	
18	1	3				_		1	1	0	U	U	U	U	0	2	
20	1	3	Chart Type	e	Conti	inue	1	1	1	2	1	0	0	0	4	1	
20	1	3	C None		Can	cel	1	1	1	2	1	0	0	0	4	2	
22	1	3	C Barch	naits	Hel	in l	1	1	1	2	1	0	0	0	3	1	
23	1	3	<ul> <li>Pie ch</li> </ul>	iarts		ap	1	2	. 1	2	. 1	0	0	0	4	2	
24	1	3	C Histog	irams:			1	2	1	2	1	0	0	0	4	2	
25	1	3		ith normal curve			1	2	1	0	0	0	0	0	6	2	
26	1	3					1	2	1	1	1	0	0	0	3	2	
27	1	4	Chart Valu	ies			1	1	4	0	0	0	0	0	0	2	
28	1	4	C Freque	encies 📀	Percentages		1	1	4	0	0	0	0	0	0	2	
29	1	4					1	2	4	0	1	0	0	0	4	2	
30	1	4	1	1	30	1	1	2	4	0	4	0	0	0	3	2	
31	1	5	/	3	1	1	1	1	1	0	0	0	0	0	0	2	
32	1	5	0	3	2	1	1	1	1	0	U	0	U	0	0	2	
<u>∢</u>	View 🖌 Var	iable View /				4											<u> </u>

Click on **Continue** and then **OK**.

The pie chart will appear in the **OUTPUT** window.

Double click on the pie-chart to activate the Chart editor



Double click again on the pie chart in the **Chart Editor** window and the **Properties** dialogue box appears. Click **on Depth & Angle.** 



Click on the **3-D** radio button. Then, click on **Apply** and **Close**.



Double click on the 3-D pie-chart. From the **Elements** menu select **Data Label Mode** and click on each slice of the pie-chart to put in the percentage value.



Click on Elements and Data Label Mode again to switch off the Data Label Mode.

Click on the **Minimize** button to return to the Output window. You have now created a 3-D pie-chart with percentage values for each segment.



# 3.3 Creating Bar Charts

Click on Graphs, select Legacy Dialogs and Bar.

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The **Bar Charts** dialogue window appears. Click on **Simple** and under *Data in Chart* use the default *"Summaries for groups of cases"*. Click on **Define**.

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In the **Define Simple Bar:Summaries for Groups of Cases**, select **Gender** and move it to the **Category Axis** box. Click on the % **of cases** radio button and then click **OK**.

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The simple bar chart for gender will appear in the **OUTPUT** window.



To create a 3-D simple bar chart, double click on the bar chart and the **Chart Editor** window appears. Double click on one of the bars and from the **Properties** dialogue box, click on **Depth & Angle.** Click on the **3-D** radio button and then click **Apply.** 



The 2-D simple bar chart changes to a 3-D chart. Click on **Elements** and select **Data Label Mode**.

![](_page_70_Figure_1.jpeg)

Click on each of the bar and the percentage value will appear.

![](_page_70_Figure_3.jpeg)

Close the **Chart Editor** window by clicking on the **Minimize** button. to view the 3-D bar chart in the **OUTPUT** window.

![](_page_71_Figure_0.jpeg)

You can click on the bar chart in the Output window to select it.

Then, click on the **Edit m**enu, select **Copy** and **Paste** the bar chart into a Word document or power-point slide.

# 3.4 Creating Clustered Bar Charts

Click on Graphs, select Legacy Dialogs and Bar.

The **Bar Charts** dialogue window appears. Click on **Clustered** and under Data in Chart use the default *"Summaries for groups of cases"*. Click on **Define**.

![](_page_71_Figure_6.jpeg)
In the **Define Clustered Bar:Summaries for Groups of Cases**, select *Marital Status* and move it to the **Category Axis** box. Then, select *Gender* and move it to the **Define Clusters by** box. Click on the % **of cases** radio button and then click **OK**.

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10	1	2	5	3		P Occ 1 [r1]	Cated	IOTV Axis:				0	0	0	0	2	
11	1	2	4	3		P Occ 2 [r2]		Marital status [k6	1	_		0	0	0	0	2	
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The clustered bar chart for *gender* clustered *by marital status* appears in the **OUTPUT** window.



To create a 3-D clustered bar chart, double click on the bar chart and the **Chart Editor** window appears. Double click on one of the bars and from the **Properties** dialogue box, click on **Depth & Angle.** Click on the **3-D** radio button and then click **Apply**.



The 2-D simple bar chart changes to a 3-D chart. Click on **Elements** and select **Data Label Mode**.



Click on each of the bar and the percentage value will appear.



Close the Chart Editor window by clicking on the **Minimize** button to view the 3-D bar chart in the **OUTPUT** window



#### 3.5 Creating Stacked Bar Charts

Click on Graphs, select Legacy Dialogs and Bar.

The **Bar Charts** dialogue window appears. Click on **Stacked** and use the default *"Summaries for groups of cases"*. Click on **Define**.

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4	1	1	6	3	9	2	1	1	1		1	0	0	0	0	5	2	
5	1	1	5	3	12	2	1	1	1		1	0	0	0	0	5	2	
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25	1	3	2	2	52	2	1	2	1		0	0	0	0	0	6	2	
26	1	3	1	1	53	1	1	2	1		1	1	0	0	0	3	2	
27	1	4	4	3	1	2	1	1	4		0	0	0	0	0	0	2	
28	1	4	3	3	4	1	1	1	4		0	0	0	0	0	0	2	
29	1	4	2	2	20	2	1	2	4		0	1	0	0	0	4	2	
30	1	4	1	1	30	1	1	2	4		0	4	0	0	0	3	2	
31	1	5	7	3	1	1	1	1	1		0	0	0	0	0	0	2	
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In the **Define Stacked Bar:Summaries for Groups of Cases**, select *Gender* and move it to the **Category Axis** box. Then, select *Marital Status* and move it to the **Define Stacks by** box. Click on the % **of cases** radio button and then click **OK**.

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The bar chart for *gender* stacked by *marital status* appears in the **OUTPUT** window.



To create a 3-D clustered bar chart, double click on the bar chart and the **Chart Editor** window appears. Double click on one of the bars and from the **Properties** dialogue box, click on **Depth & Angle.** Click on the **3-D** radio button and then click **Apply.** 



The 2-D simple bar chart changes to a 3-D chart. Click on **Elements** and select **Data Label Mode**.





Click on each of the bar and the percentage value will appear.

Close the **Chart Editor** window by clicking on the **Minimize** button to view the 3-D bar chart in the **OUTPUT** window.



#### 3.6 Creating Simple Boxplots

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18	1	3	7	6	6	1	1	1		1	0	0	0	0	0	0	2	
19	1	3	5	3	16	1	1	1		1	2	1	0	0	0	4	1	
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Click on **Graphs**, select **Legacy Dialogs** and **Boxplot**.

The **Boxplot** dialogue window appears. Click on **Simple** and use the default *"Summaries for groups of cases"*. Click on **Define**.



In the **Define Simple Boxplot:Summaries for Groups of Cases**, select *Age* and move it to the **Variable** box. Then, select *Gender* and move it to the **Category Axis** box. Then, click **OK**.

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The simple boxplot for **Age** appears in the **OUTPUT** window.



The dark horizontal line in the box, represents the median of age for each gender. The boxplots show that the median age for male is higher than female. The long whiskers indicate that the distribution of age is skewed to the right for each gender. The small white circle indicates there is an outlier in the female group.

#### **3.7 Creating Clustered Boxplots**

Click on **Graphs**, select **Legacy Dialogs** and **Boxplot**.

The **Boxplot** dialogue window appears. Click on **Clustered** and use the default *"Summaries for groups of cases"*. Click on **Define**.



In the **Define Clustered Boxplot:Summaries for Groups of Cases**, select *Age* and move it to the **Variable** box. Then, select *Name of Village* and move it to the **Category Axis** box. Then, select *Gender* and move it to the **Define Clusters by** box and click **OK**.

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The basic R system, and contributed packages, are available from the Comprehensive R
Home page for R: http://www.R-project.org/

The clustered boxplot of **Age** for every village will appear in the **OUTPUT** window.



## Note 8 – Using R software

### Outline

- What is R and Why use R
- Installation of R
- Start R
- How to use R
- Some of my applications
- Try using R now

# What is R and Why use R

- R is a language and environment for statistical computing and graphics. It is superior to many other graphics and analysis packages commonly used, and has a very wide range of statistical analysis and data plotting functions.
- R is free.
- R is used in academia, business & industry
- It was said that there are at least 2 million users.
- R is effective and an independent platform. R can run in Windows, Mac, Linux. This is very important for communicating with different system users.
- Open source. Bugs found, reported and corrected. You can write your own packages.
- Highly extensible, with over 3500 user-contributed packages available and still growing.

- R has many help resources. That is absolutely unique. There are many online help resources both from r-project.org and from many specific lists and interest groups, even though sometimes it seems difficult to choose.
- R makes excellent graphics.
- The command-line interface is much better for using, learning and teaching. Users can post, reproduce and save the commands exactly.
- R is command-oriented. Users normally type commands, and the R responds interactively to these commands. And many packages are developed by about 20 core team members and many other contributors.
- Unlimited possibilities.
- The basic R system, and contributed packages, are available from the Comprehensive R Archive Network (CRAN) at <u>http://cran.r-project.org/</u>
- Home page for R: <u>http://www.R-project.org/</u>

### Installation of R

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	What are R and CRAN?	
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CRAN is a networ	k of ftp and web servers around the world that store identical, up-to-date, versions of code and documentation for R. Please use the CRAN mirror nearest to you to minir	nize network load.
	Submitting to CRAN	
To "submit" a pa	ckage to CRAN, check that your submission meets the CRAN Repository Policy and then use the web form.	
If this fails, upload half a dozen peop	I to ftp://CRANR-project.org/incoming/ and send an email to CRAN@R-project.org following the policy. Please do not attach submissions to emails, because this will clut le.	ter up the mailboxes of
Note that we gen	erally do not accept submissions of precompiled binaries due to security reasons. All binary distribution listed above are compiled by selected maintainers, who are in charg	ge for all binaries of their

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Contributors		Norway		
What's new?		http://cran.uib.no/	University of Bergen	
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Bug Tracking		http://cran.gis=lab.info/	GIS-Lab.info	
Conferences		http://cranistatinus.edu.sg/	National University of Singanore	
Search		Slovakia		
Documentation		http://cran.fvxm.net/	FYXM.net, Bratislava	
Manuals		South Africa		
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Wiki		http://cran.mirror.ac.za/	TENET, Johannesburg	
Books		http://ftp.cixug.es/CRAN/	Oficina de software libre (CIXUG)	
Other		http://cran.es.r-project.org/	Spanish National Research Network, Madrid	
		Sweden		
<i>Misc</i> Bioconductor		http://ftp.sunet.se/pub/lang/CRAN/	🖉 Swedish University Computer Network, Uppsala	
Related Projects		Switzerland	<b>FT</b> 112	
User Groups		http://stat.etnz.ch/URAN/	ETH Zuench	
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### Start R

- Go to cran.r-project.org;
- Under "Download and Install R", click on the "Download R for Windows" link;
- Under "Subdirectories", click on the "base" link;
- Save R file somewhere and start it;
- To Install R by clicking "next".....;
- When asked 32-bit or 64-bit, you need check your computer operating system (os);
- After finishing the installation, check if there is an "R" icon on the desktop of the computer. If so, start it by double-clicking;
- Or, start it from the start menu of programs.

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R version Copyright Platform: R is free You are we Type 'lice Natural R is a col Type 'cont 'citation( Type 'demo 'help.star Type 'q()'	<pre>3.1.2 (2014-10-31) "Pumpkin Helmet" (C) 2014 The R Foundation for Statistical Computing x86_64-w64-mingw32/x64 (64-bit) software and comes with ABSOLUTELY NO WARRANTY. lcome to redistribute it under certain conditions. nse()' or 'licence()' for distribution details. language support but running in an English locale laborative project with many contributors. ributors()' for more information and )' on how to cite R or R packages in publications. ()' for some demos, 'help()' for on-line help, or t()' for an HTML browser interface to help. to quit R.</pre>		
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### How to use R

- We can write commands and calculate directly at R Console, but editing "script" is convenient.
- Simple output is prefixed by [1].
- <- is the assignment operator; in the illustration, c <-1:3, the vector of integers from 1 to 3 is assigned to a variable named x.
- lower- and upper-case letters are different.
- To download and install a package: install.packages("")
- Packages are introduced by *library(""")*, and this introduction needs to be done every time before using.



Value

# Objects

- All variables (scalars, vectors, matrices, etc.) created by R are called objects. In R, we assign values to variables using an arrow "less than" + "minus": "<-".</li>
- There are several possible different types of objects in R, including scalars, vectors, matrices, arrays, data frames, tables, and lists.
- List objects: ls()
- Remove objects: rm("object")
- Object, function, arguments

# Help for R

- help(package="base") # List package contents
- ?data.frame # help on a specific task
- ?Syntax # help on a general topic
- news(package="ggplot2") # details of recent changes
- demo("graphics") # demonstrate graphics
- browseVignettes() # view index of vignettes in web browser
- See documentation links at http://www.r-project.org for manuals,
- wiki, R journal, books etc.
- CRAN task views: http://cran.r-project.org/web/views/
- Many R bloggers, aggregated at http://www.rbloggers.com/

# Some applications of R

- Wherever there is a calculation, data analysis, graphics.....
- Some of our experiences:

Panel data analysis

**Cluster analysis** 

Mixed model estimations

Dealing with demand elasticities of GDP and price on forest products, drivers of deforestation, forecasts of forest areas and forest carbon stock, etc.

#### Let's TRY NOW!

Thanks for the great contributions from R developers and all other contributors!