

Workshop Tentative Schedule in 2012

Introduction to Statistical Analysis in “R” for Forest Resource Management

August 7-9, 2012

1st Day

Morning session

0. Workshop Introduction

1. Overview of Lectures

Handling and managing the data collected in the field is one of the main tasks in developing forest planning and conducting efficient and effective forest management. Through the workshop the participants are supposed to study and master the use of the statistical software called “R” for forest resource management.

1.1. What is “R” ?

1.2. Database for Statistical Analysis

1.3. Demonstrative Example for Statistical Analysis

Afternoon session

2. Introduction to Statistical Software “R”

2.1. Installation of “R”

2.2. Play with “R”

2.3. Basic Rules

3. Data handling

In the statistical analysis, we often have to deal with a huge amount of data with many different types there is a real data. So we need the process so called “data handling” that at first begins with reading the original data into the file, knowing the summary of the data, arranging the data for analysis and spit outing the, output the result as the data file at last.

3.1. File handling

3.1.1. File input and output

3.1.2. View the summary of the data

3.1.3. Extracting Data

3.1.4. Data replacement and combining

2nd Day

Morning session

3.2. Mathematical Calculation

In order to numerically and quantitatively express the data summary by some kind of number, we need to use the representative number. In this section, let us handle such kind of number by using R. R allows us to handle not only scalar but also matrix.

3.2.1. Arithmetic Calculation

3.2.2. Vectors and Matrices Calculation

3.2.3. Basic Statistics

Afternoon session

4. Graphics

When we analyze the data, it is important to know the property of the data, for example, distribution. Graphical representations The method to express the data by graphical way is are very efficient ways to analyze the property of the data. In R, many kinds of graphical functions are prepared.

4.1. Graphics for single variable

4.1.1. Histogram and barplot

4.1.2. Box-plot

4.1.3. Pie chart

4.2. Graphics for two variables data

4.2.1. Multiple graphics of histogram and box-plot

4.2.2. Scatter plot

4.3. Graphics for multivariate data

4.3.1. 3D-plot

4.3.2. Pairwise plot

4.4. Graphics parameters

4.4.1. Parameters

4.4.2. Line

4.4.3. Text

4.4.4. Legend

3rd Day

Morning session

5. Regression analysis
 - 5.1. Single regression
 - 5.2. Multiple regression

Afternoon session

6. Principal component analysis
7. Practical Exercise for The Workshop
8. Future Plan.