

# Stratified Sampling by ALIS

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# What is the stratification (I)

- ❖ The process which it divides mother population (*framework*) into the groups having same nature
- ❖ It conducts before the sampling
- ❖ The element of mother population belongs to only any one of stratification
- ❖ It produces the weighted average of samples but arithmetic average

# What is the stratification (II)

## **Merit:**

- It can increase the estimation accuracy
- It is efficient than single mother population

## **Demerit:**

- It needs the correct information on mother population
- It has the possible of much cost than single mother population

# Stratification of area mesh which including agricultural land or not including agricultural land

*ALIS adopts the stratified sampling*

## Basic method

$$y = \frac{\sum_{i=1}^n y_i}{n} N$$

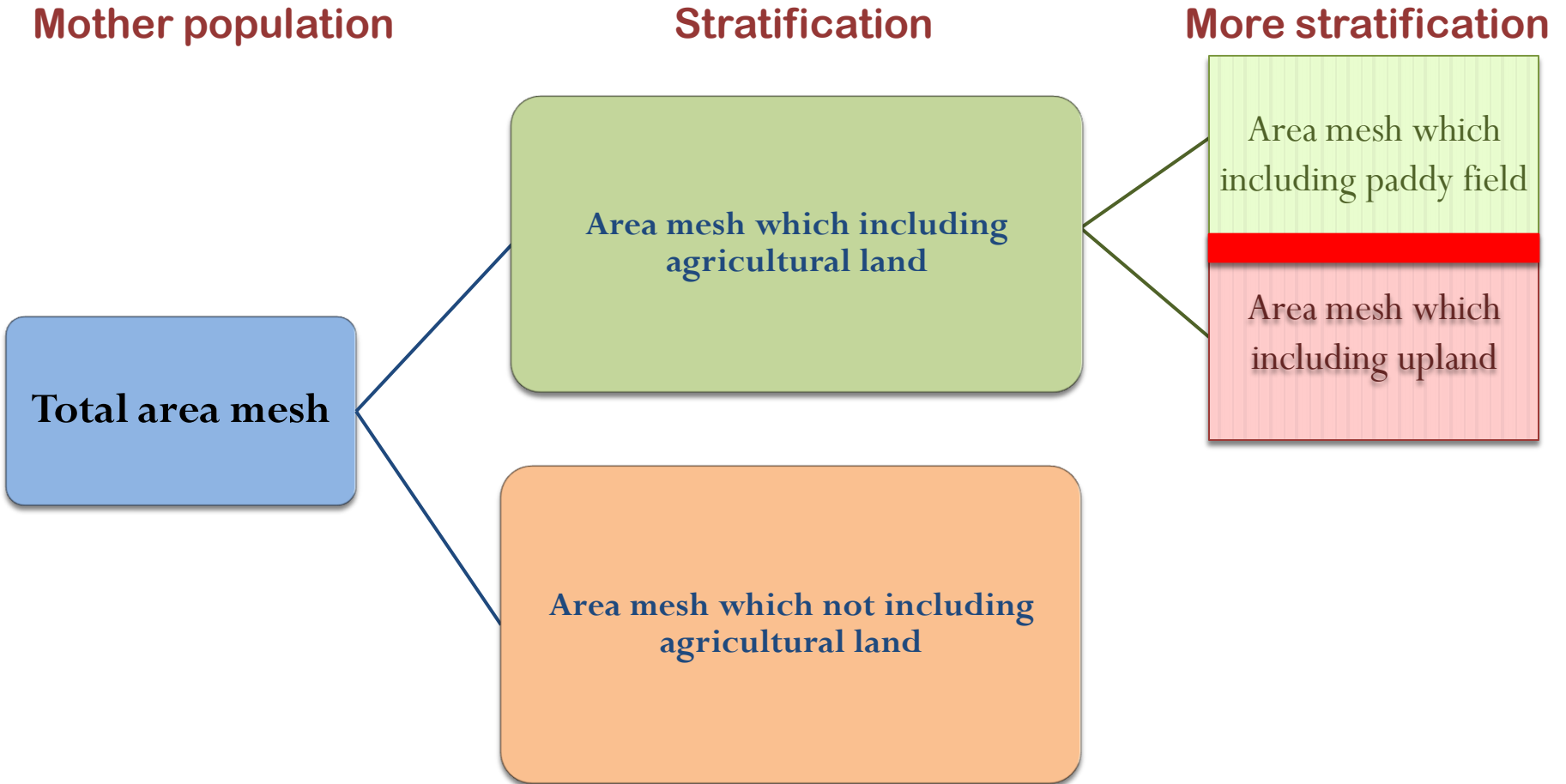
**y** = Tentative agricultural land area estimated by first sample  
**N** = The number of total area mesh

## ALIS method

$$y = \frac{\sum_{i=1}^n y_i}{n} N'$$

**N'** = The number of area mesh including agricultural land

# Stratification of agricultural land to paddy field and upland



# Paddy field



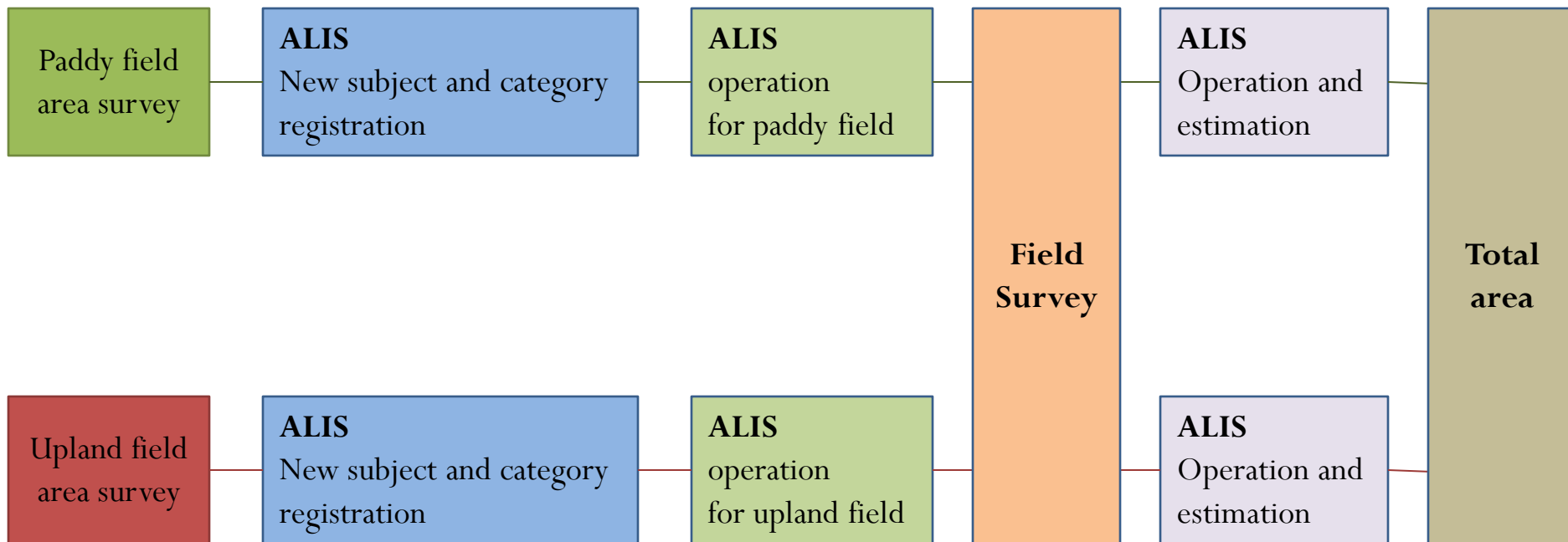
# Upland



*(Consideration II)*

# Stratification of agricultural land to paddy field and upland

*Stratified sampling by ALIS*





# Stratification of agricultural land to paddy field and upland

## Subject registration

The screenshot shows a web browser window titled "Subject - Mozilla Firefox". The page header is "Subject Master Maintenance" with a "Menu" link. The main content area is divided into two sections. The first section is for "Subject" registration, featuring a dropdown menu with "- Create -" selected, and input fields for "SubjectName", "LandTitle", and "ItemTitle". There is also a "Disable" checkbox and "Remove" and "Entry" buttons. The second section is for "Years" registration, featuring a dropdown menu with "- Create -" selected, and an input field for "SurveyYears". It also has a "Disable" checkbox and "Remove" and "Entry" buttons. At the bottom of the page, there is a copyright notice: "Copyright © 2011 AFSIS Project All Rights Reserved." and a status bar with the text "完了".

Register: Survey name and survey year

## Category registration

The screenshot shows a web browser window titled "Category - Mozilla Firefox". The page header is "Category Master Maintenance" with a "Menu" link. The main content area is divided into three sections. The first section is for "Subject" registration, featuring a dropdown menu with "Area Survey" selected. The second section is for "Land" registration, featuring a dropdown menu with "- Create -" selected, and an input field for "LandName". There is also a "Disable" checkbox and "Remove" and "Entry" buttons. The third section is for "Item" registration, featuring a dropdown menu with "- Create -" selected, and an input field for "ItemName". It also has a "Disable" checkbox and "Remove" and "Entry" buttons. At the bottom of the page, there is a copyright notice: "Copyright © 2011 AFSIS Project All Rights Reserved." and a status bar with the text "完了".

Register: Survey crops name

ID	root
Password	RootALISAdmin

## Stratification of agricultural land to paddy field and upland

### **Merit:**

Increase of sample appearance rate of upland crops  
→ Increase of data accuracy

### **Task:**

Correct division of paddy field and upland on the map monitor

## Stratification by crops area

### Case I: Subdivision of each province border line by crops area

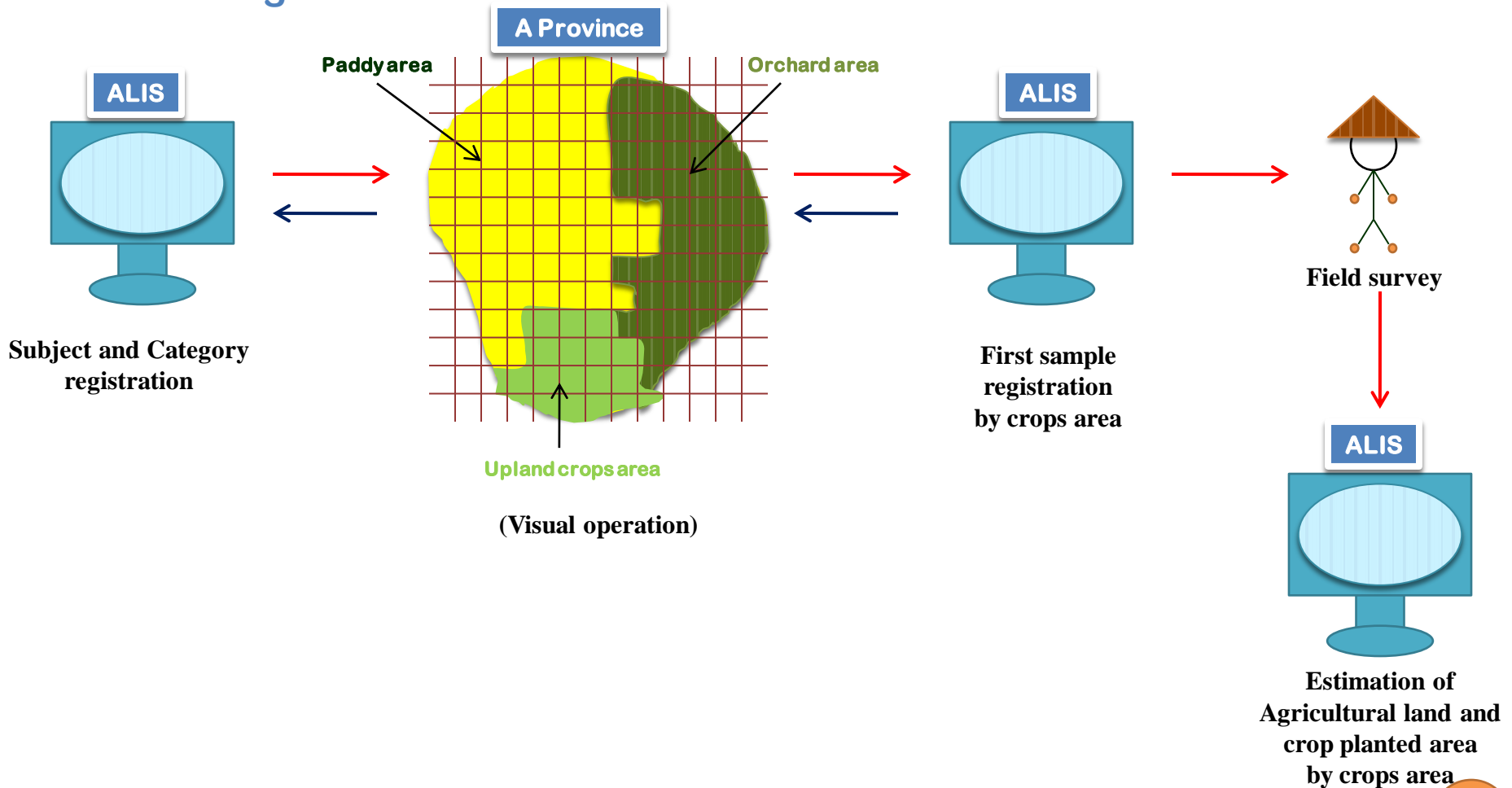
It has to prepare the correct information on crops area for the modification of ALIS program  
——→ It's requested more budget.

### Case II: Ingenious of ALIS function

Division of crops area by wide mesh  
——→ The survey of each crops area is registered as each other survey.

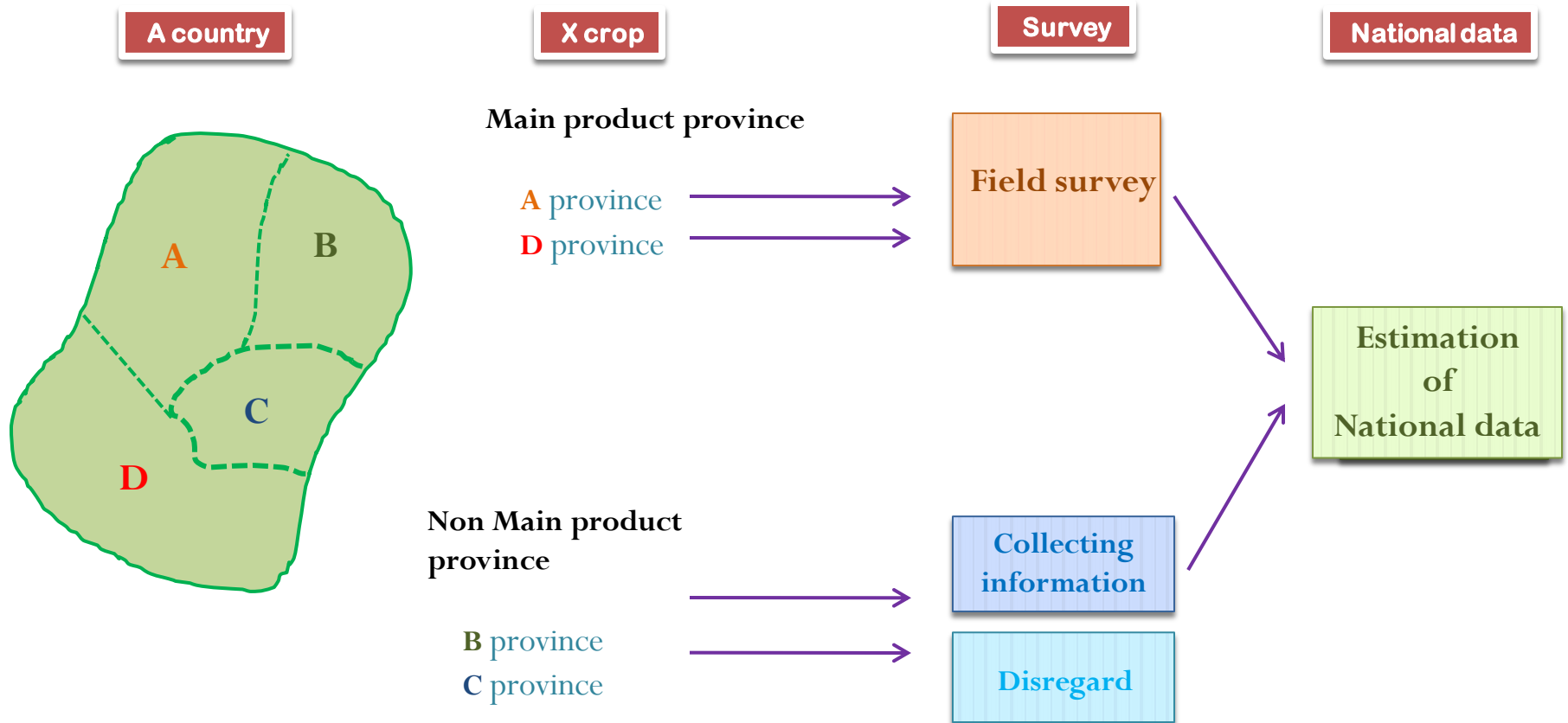
# Stratification by crops area

## Case II: Image



(Consideration IV)

# Stratification of main product province and non-main product province (Stratification of province)



THANK YOU