

# Magtanim ay di biro: *labor use & mechanization in rice farming*

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SJCParan      CEYusongco  
DECSalvahan    DSKitongan  
SED Staff*

- **2011 wet season** and 2012 dry season
- Sample size (n): 2500 sample farmers from 33 provinces but **2399\*** is available for the analysis

*54: temporarily stopped farming; 38: crop failure; 9: poor survey returns in Brgy. Solon, Maguindanao*

## Seeds and seedling management

- seedbed preparation
- seed sowing
- fertilizer application
- chemical application
- irrigation

## Land preparation

- rotavating
- plowing
- harrowing
- leveling
- side plowing
- cleaning & repair of dikes

## Crop establishment

- pulling of seedlings
- hauling of seedlings
- direct-seeding
- transplanting
- replanting

## Crop care & maintenance

- irrigation
- drainage
- fertilizer application
- pesticides application
- weeding
- non-chemical pest management
- field visit

## Harvesting and threshing

- harvesting
- threshing

## Post harvest

- cleaning/blowing
- hauling of inputs
- hauling of outputs

## Types of labor:

- OFE
- hired
- permanent

# Details of the following...

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labor use

labor & power cost

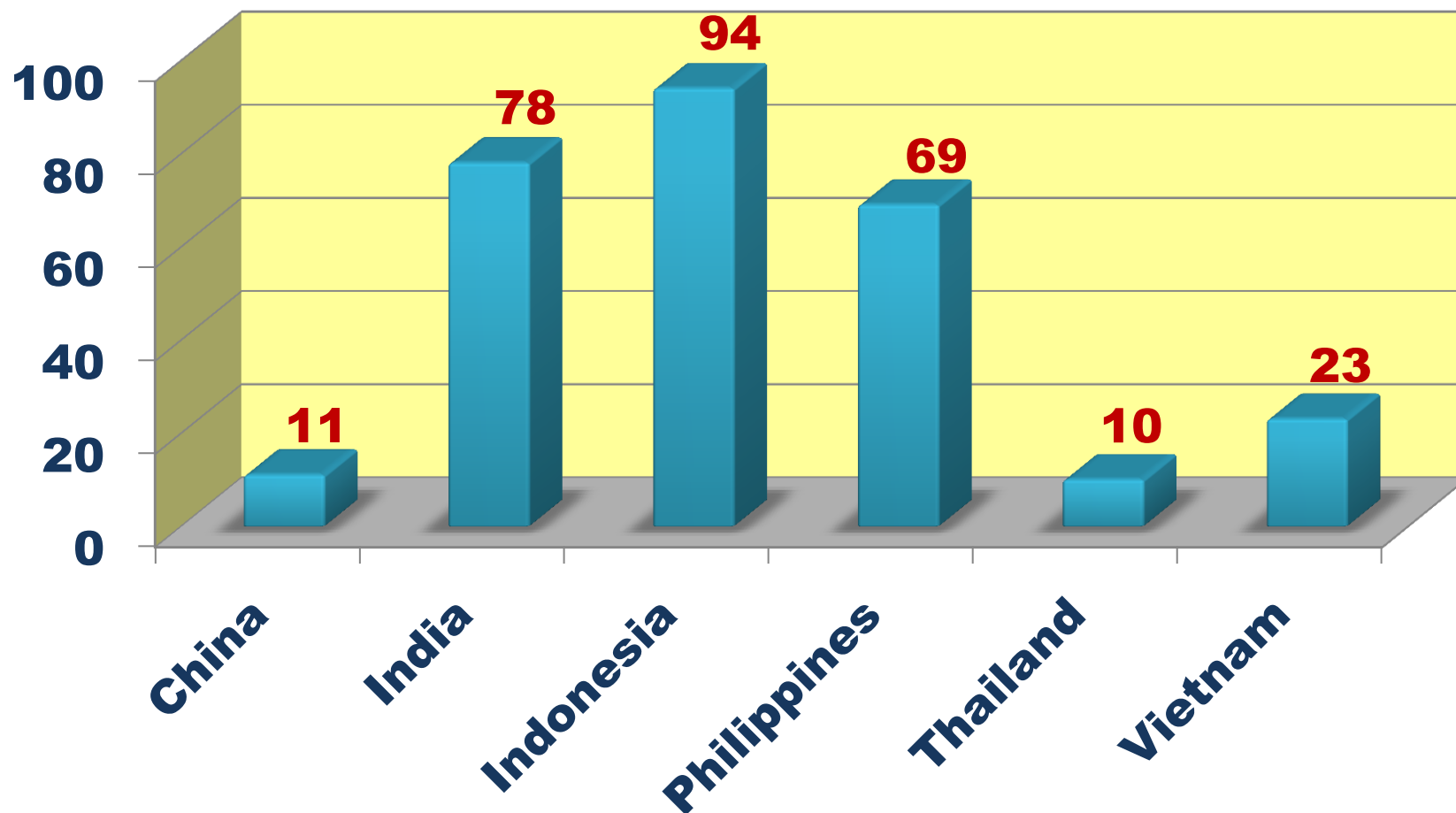
level of mechanization

# Comparison of labor use (person-days/ha) across countries

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## Person-days/ha

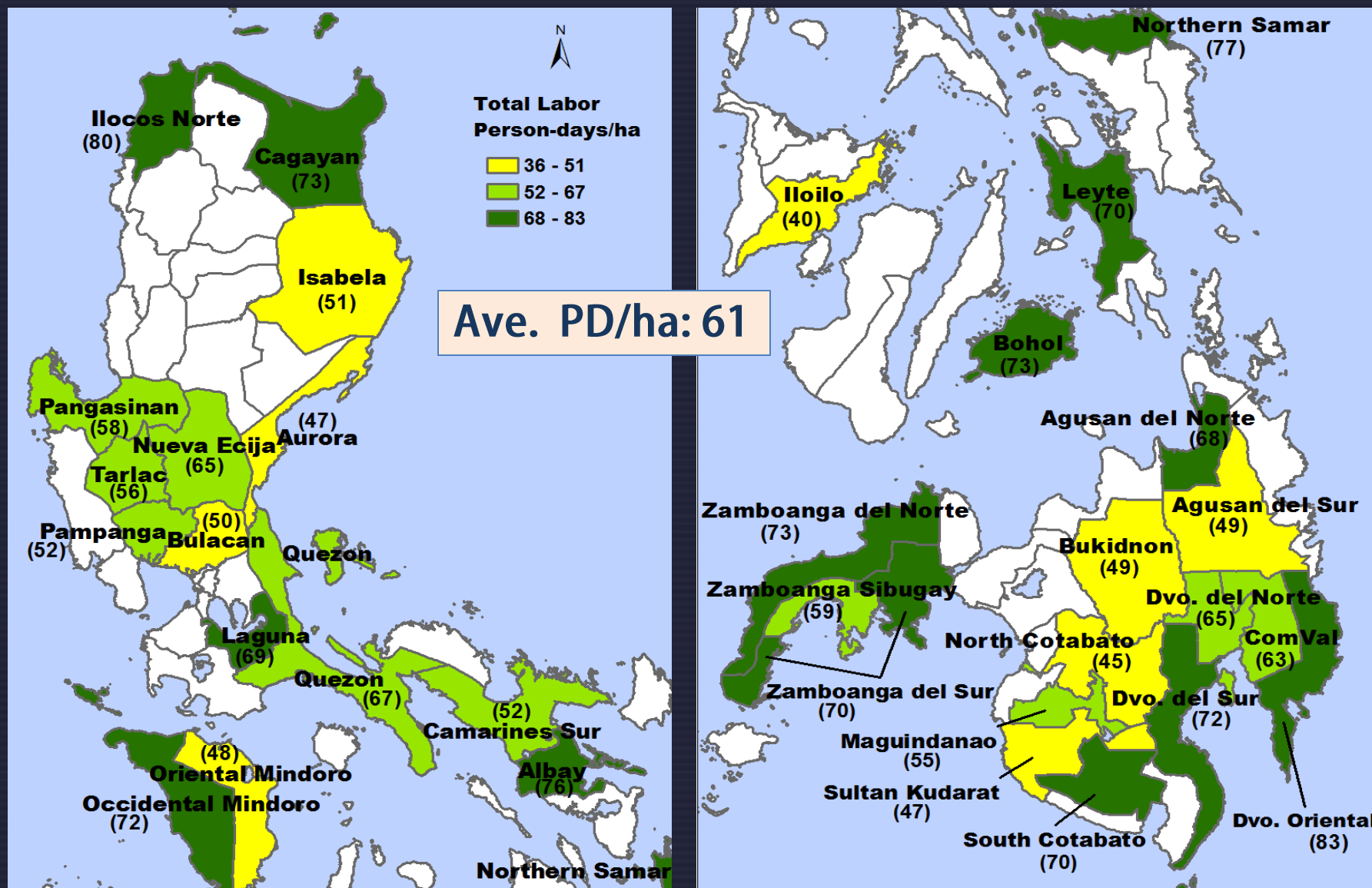


Source: Benchmarking, Jan-Jun 2013 survey

# Labor use (person-days/ha) by province

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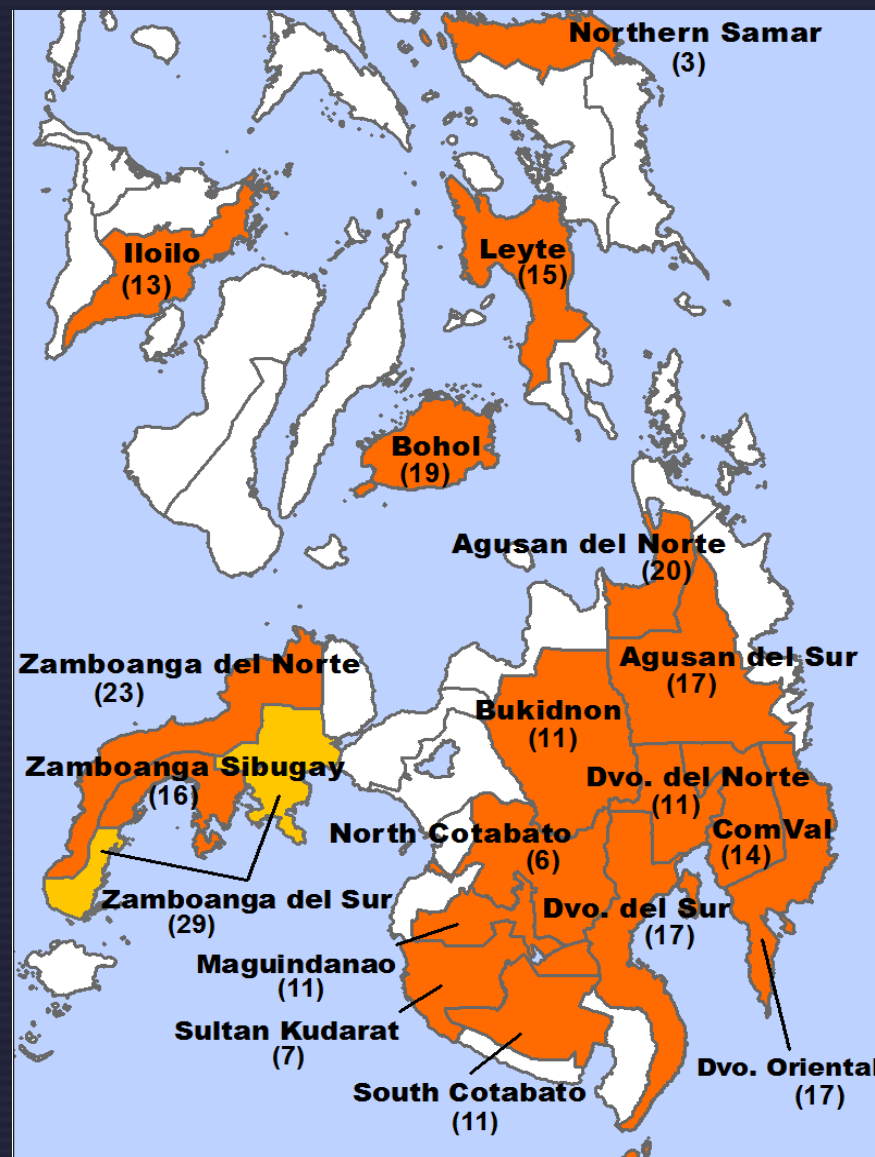
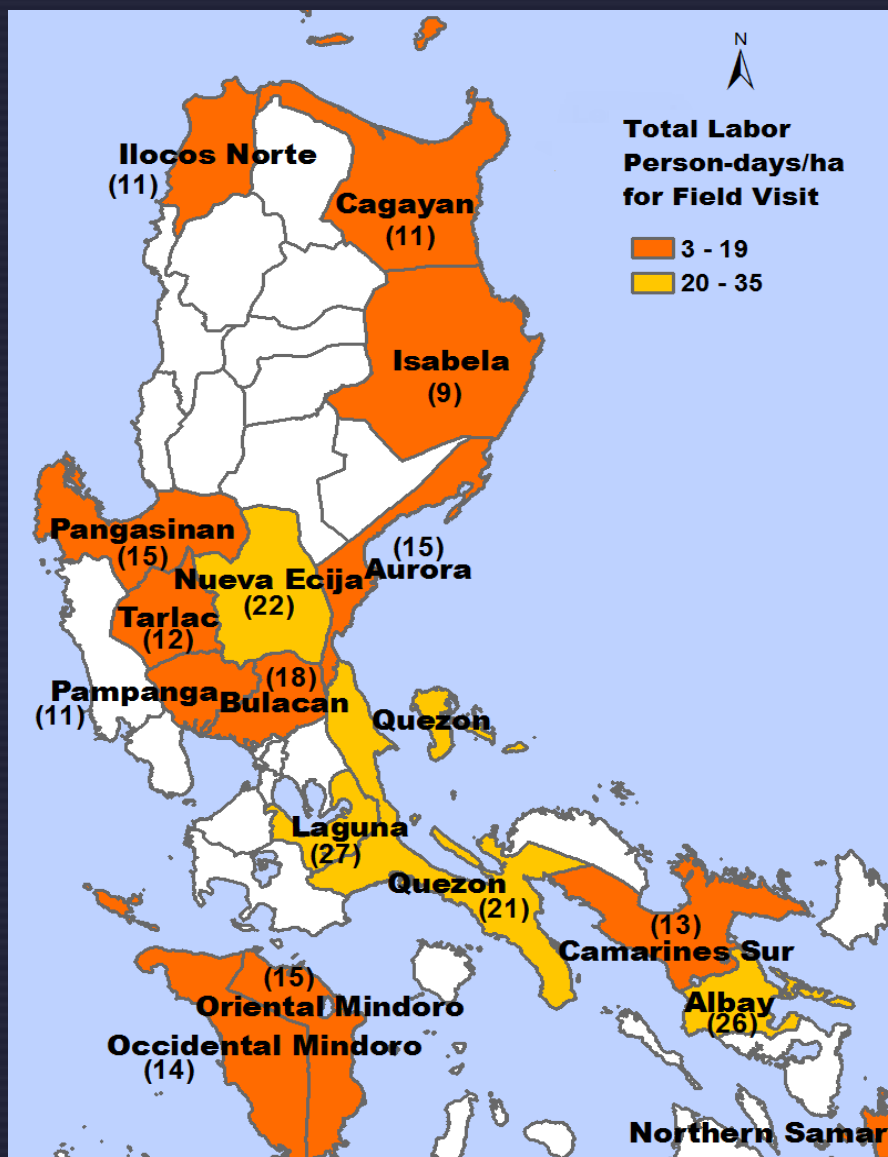




# Labor use (person-days/ha) by province (field visit)

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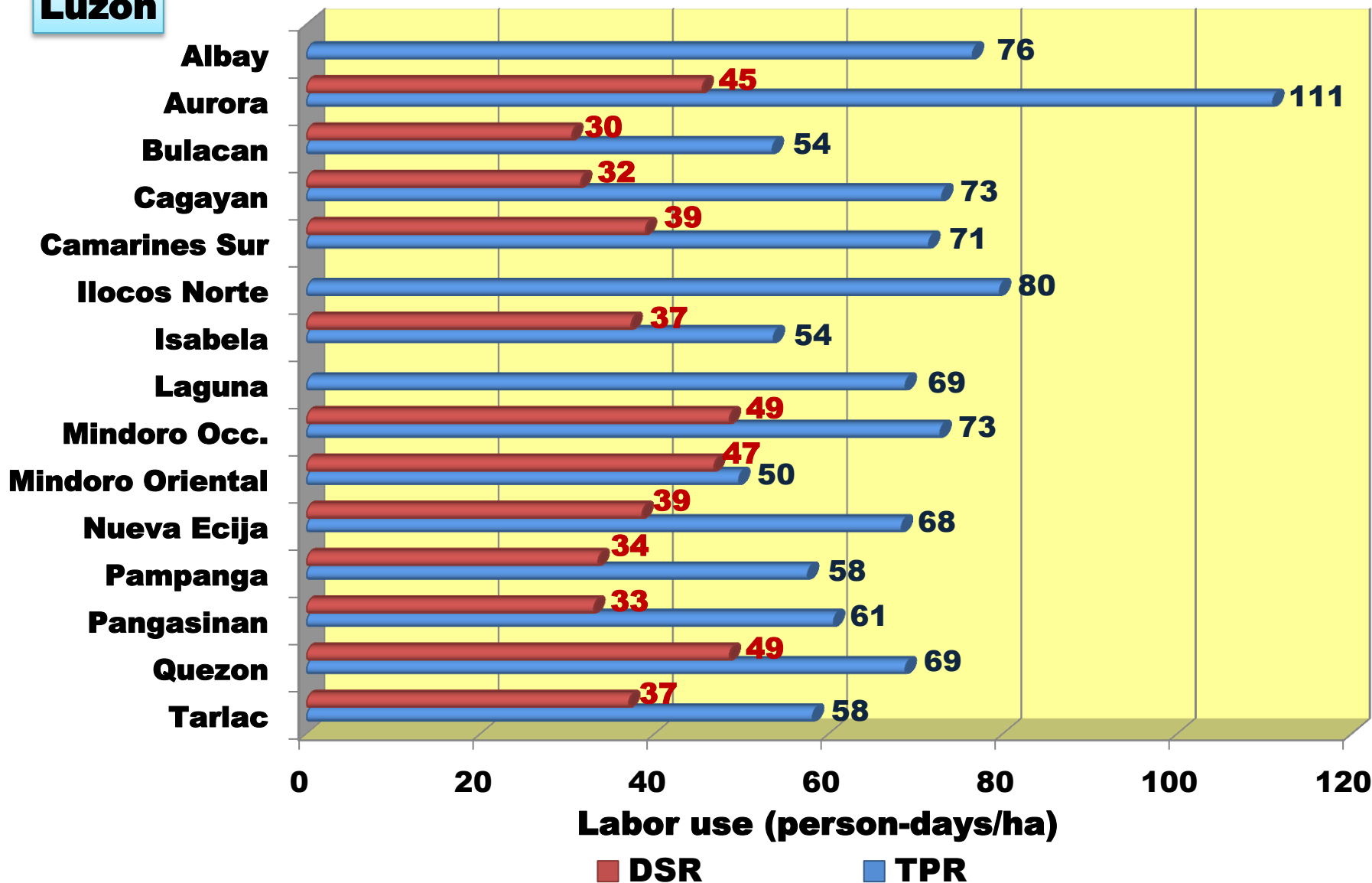


# Labor use (person-days/ha) by crop establishment

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## Luzon

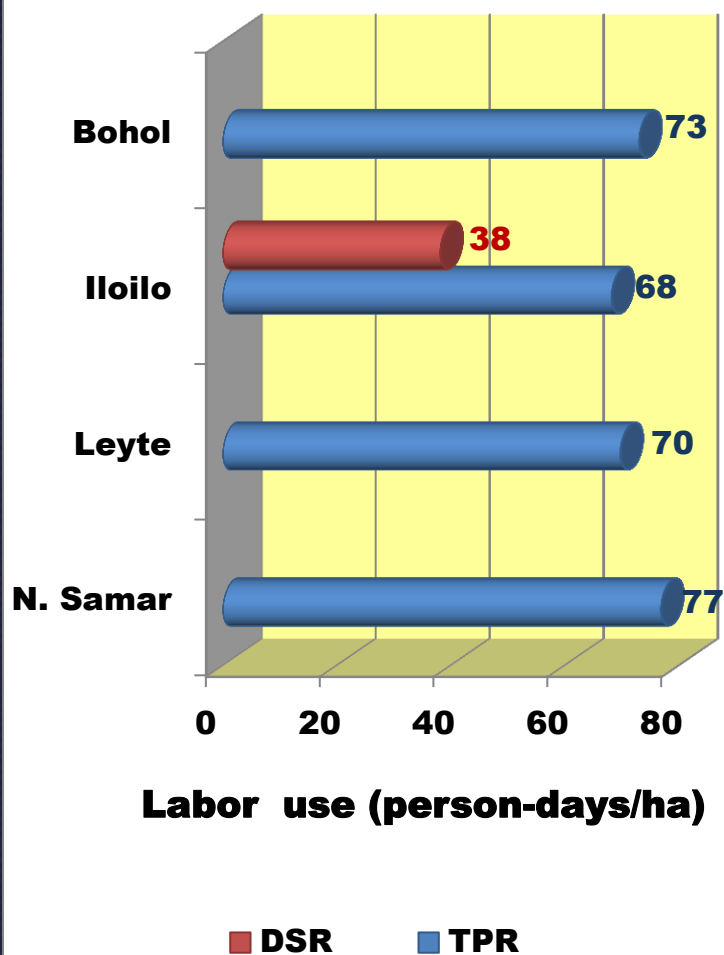


# Labor use (person-days/ha) by crop establishment

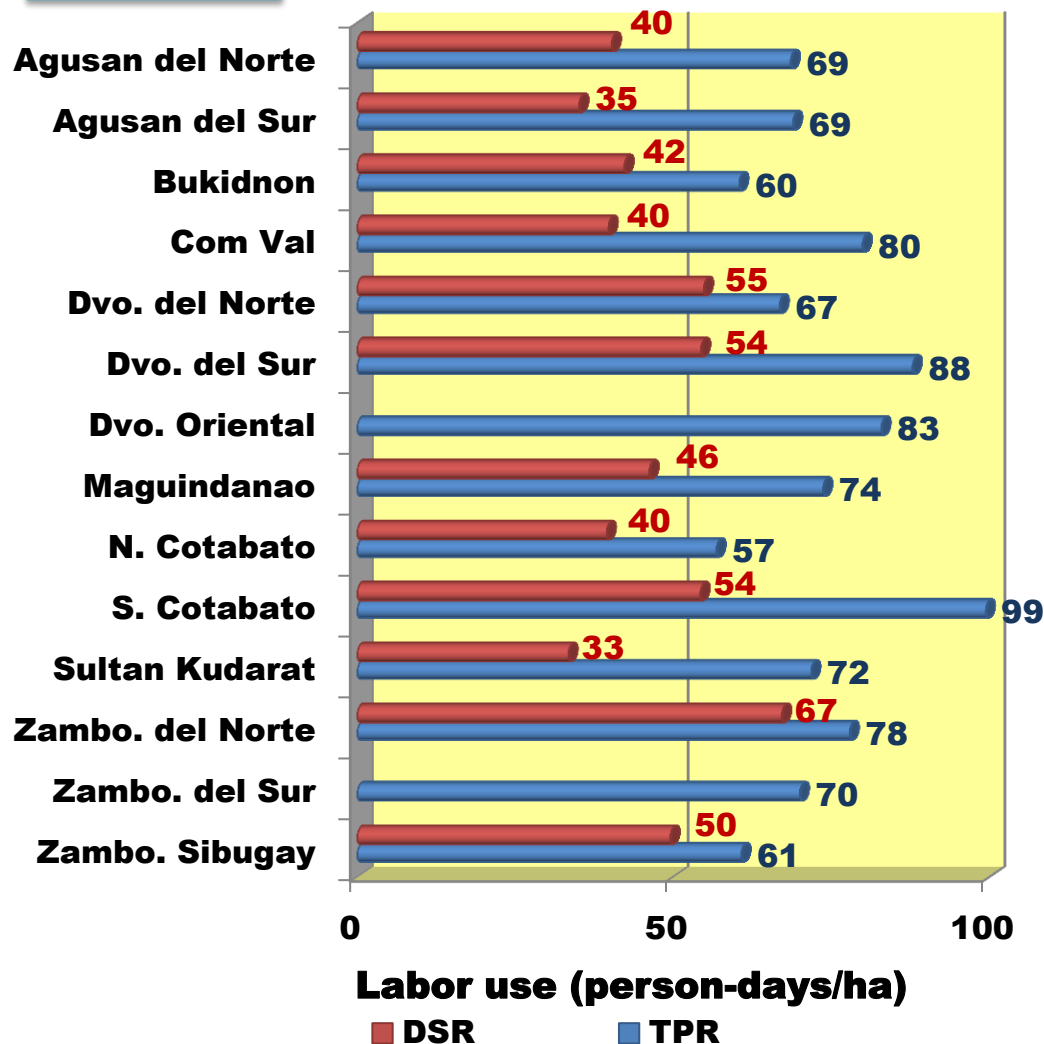
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## Visayas

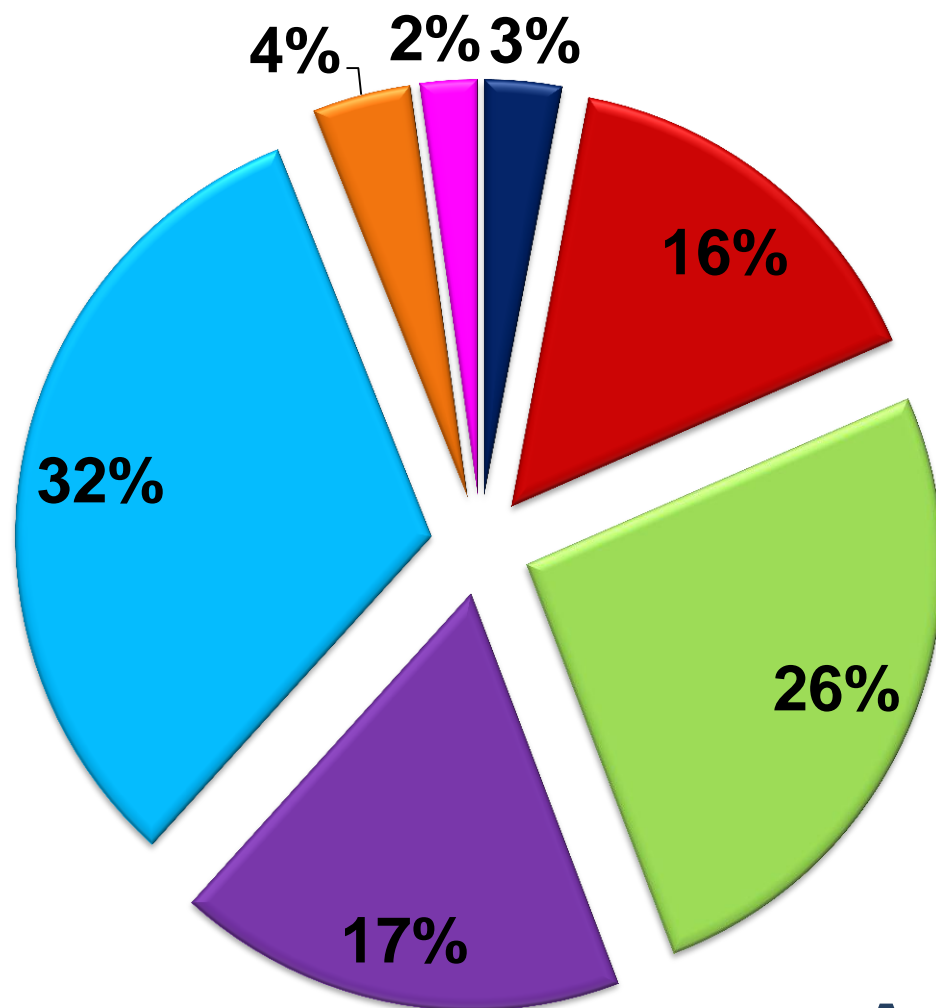


## Mindanao



# Distribution of labor use (person-days/ha) by major activity

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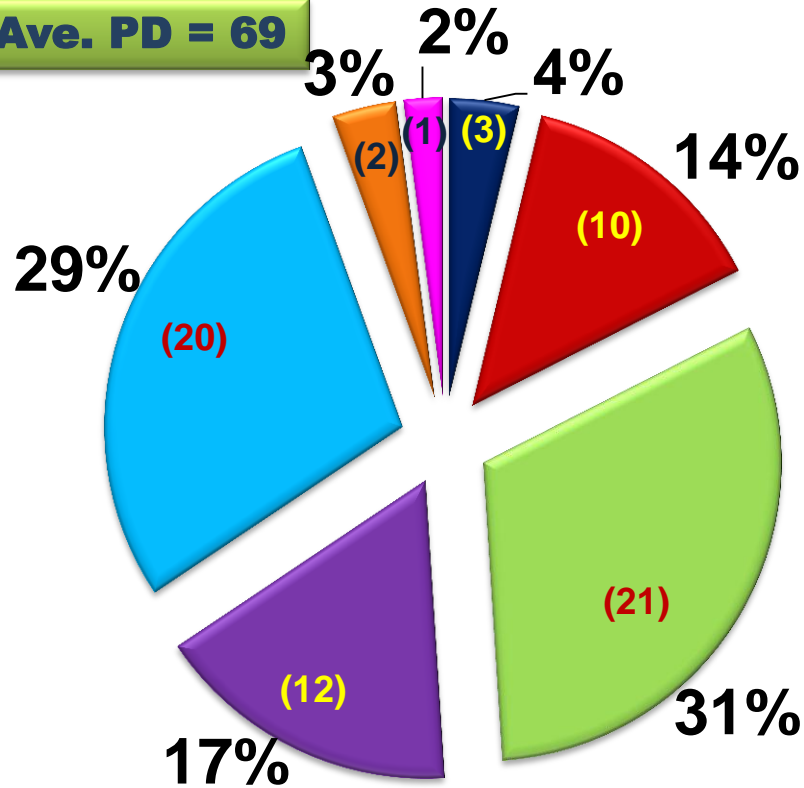


- Seed Establishment
- Land Preparation
- Crop Establishment
- Crop Care & Maintenance
- Harvesting & Threshing
- Post Harvest
- Permanent Labor

**Ave. person-days/ha = 61**

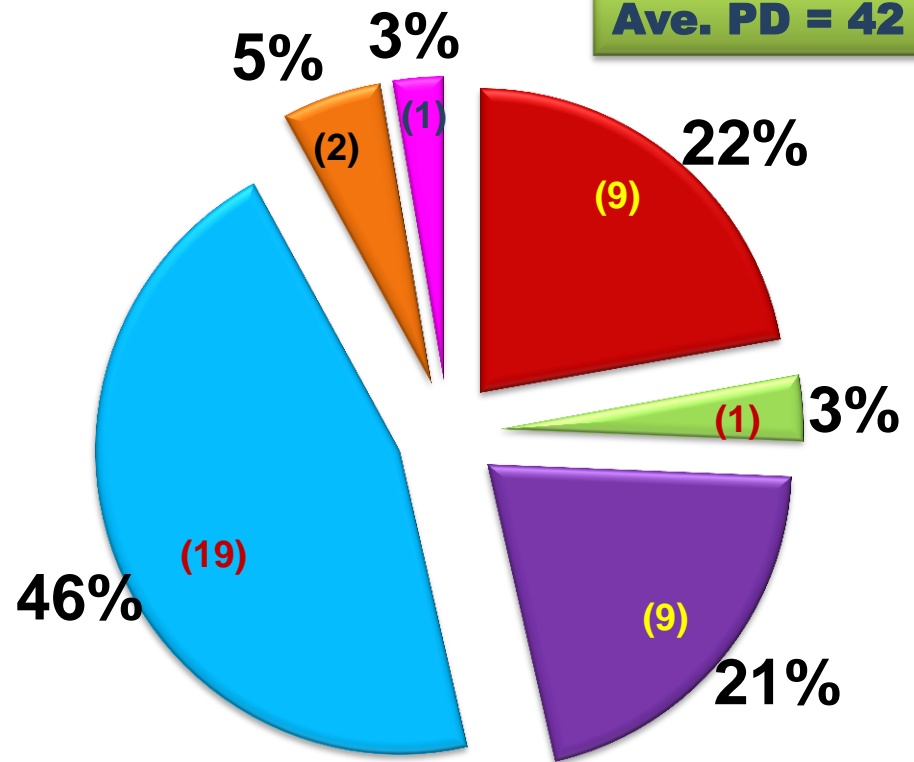
# Distribution of labor use (person-days/ha) by crop establishment

Ave. PD = 69



**TPR**

Ave. PD = 42

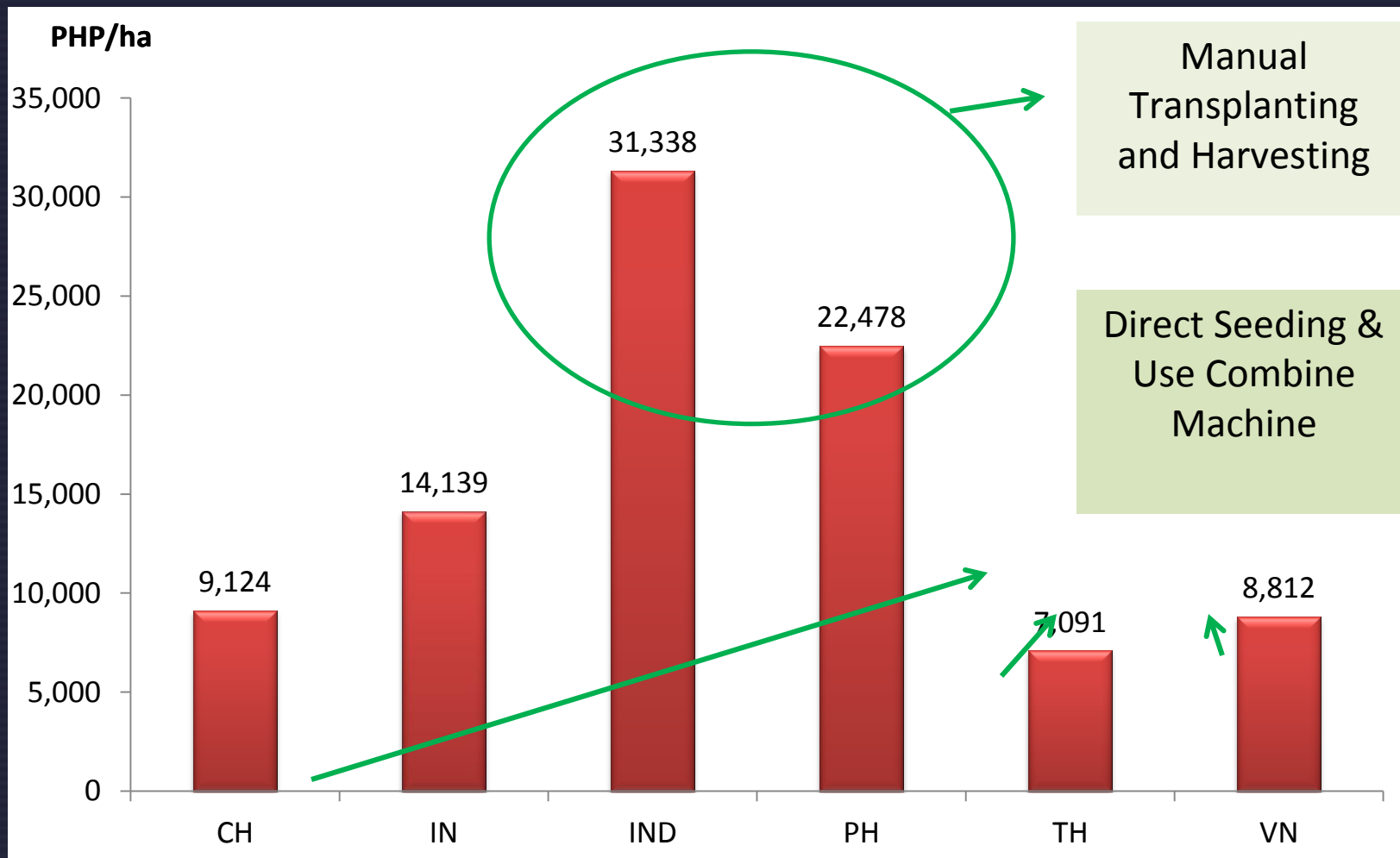


**DSR**

- Seed Establishment
- Land Preparation
- Crop Establishment
- Crop Care & Maintenance
- Harvesting & Threshing
- Post Harvest
- Permanent Labor

# Comparison of labor & power cost/ha across countries

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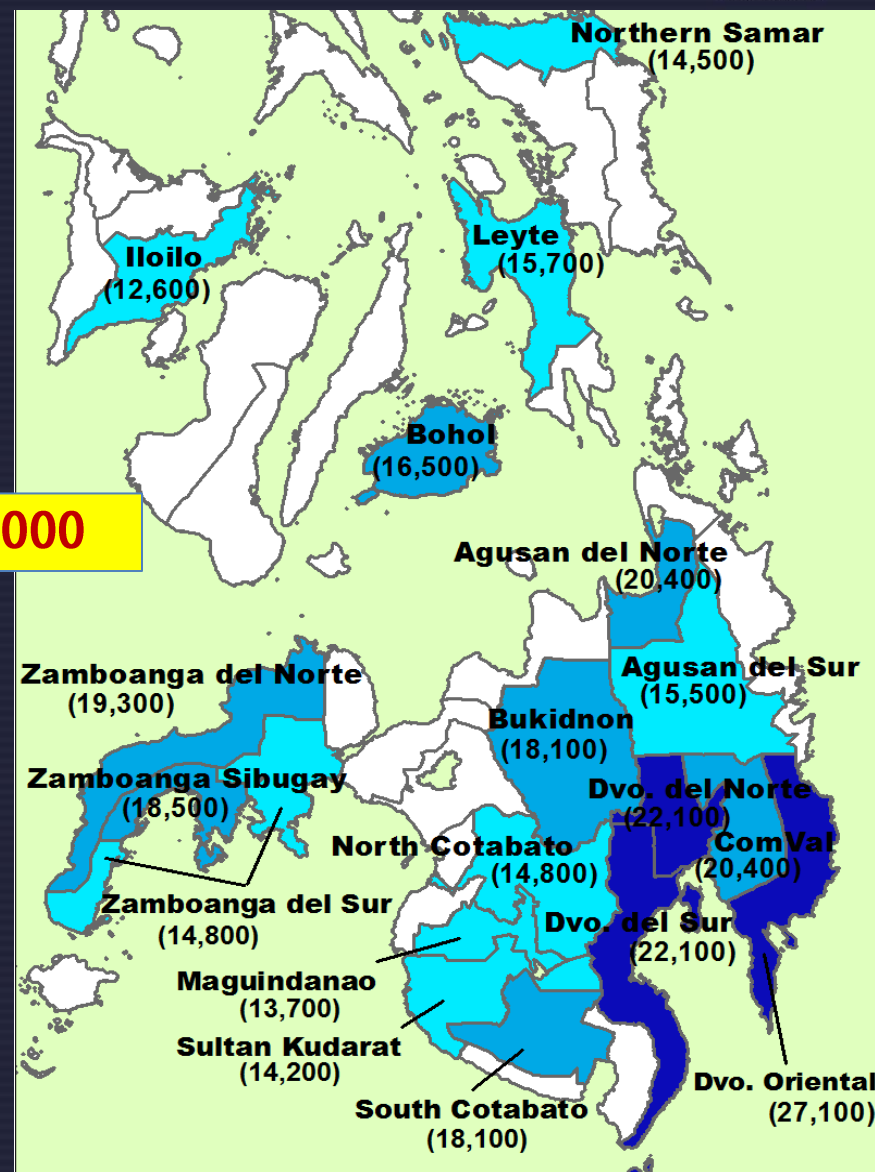
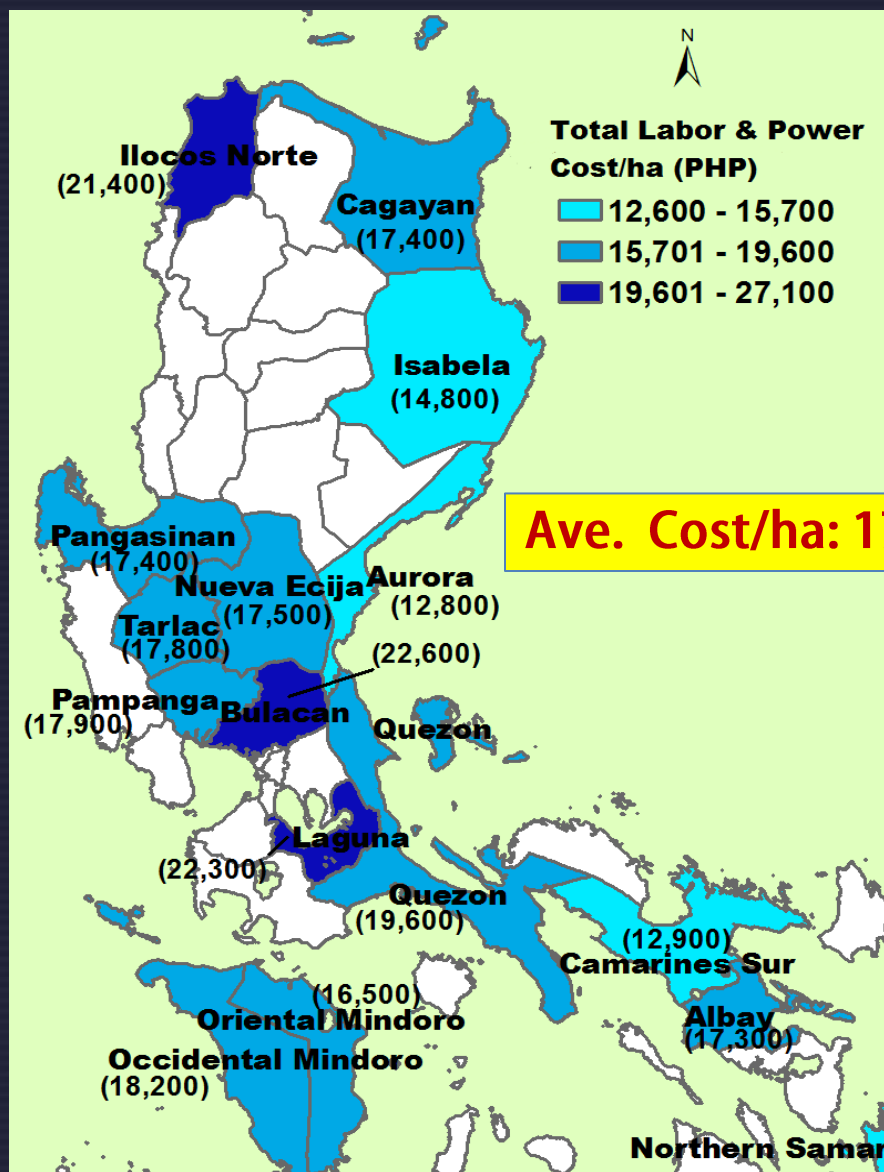


Source: Benchmarking, Jan-Jun 2013 survey

# Total labor and power cost/ha by province

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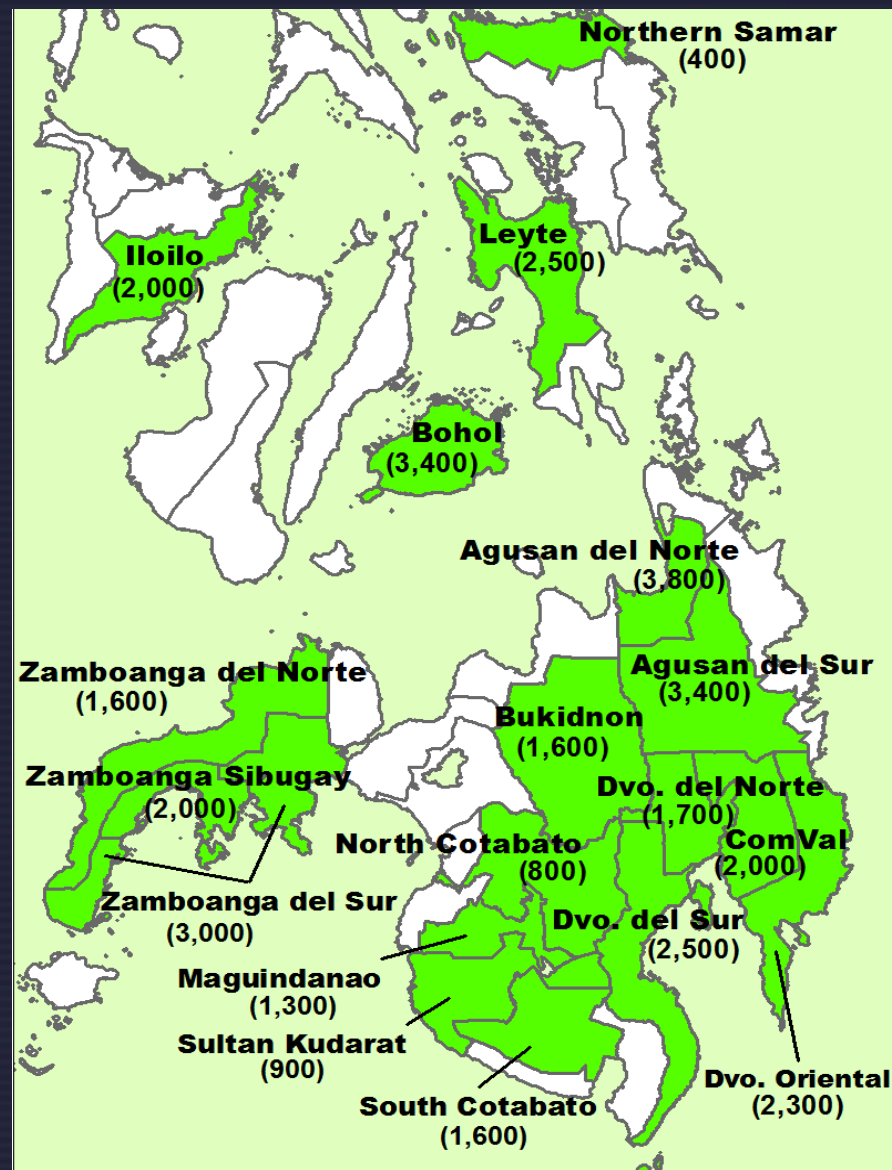
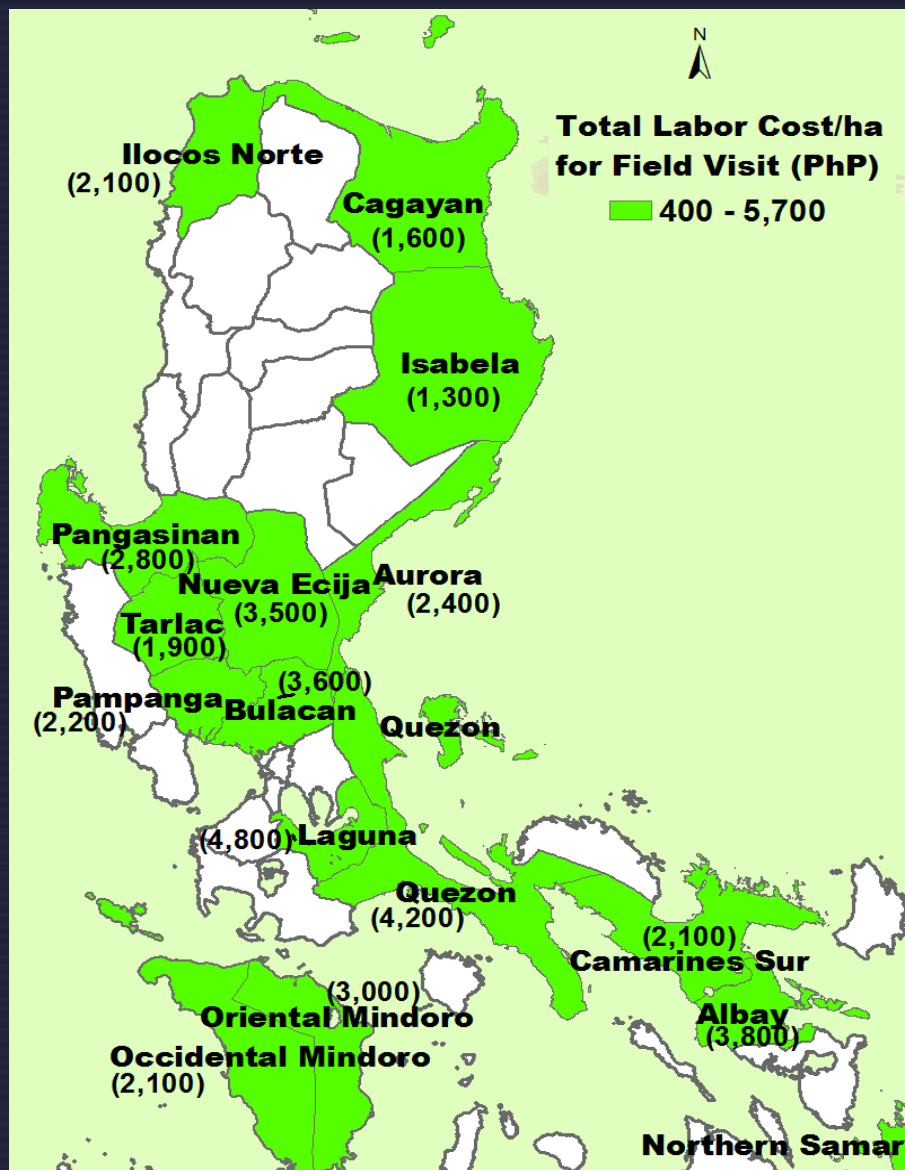




# Total labor cost/ha by province (field visit)

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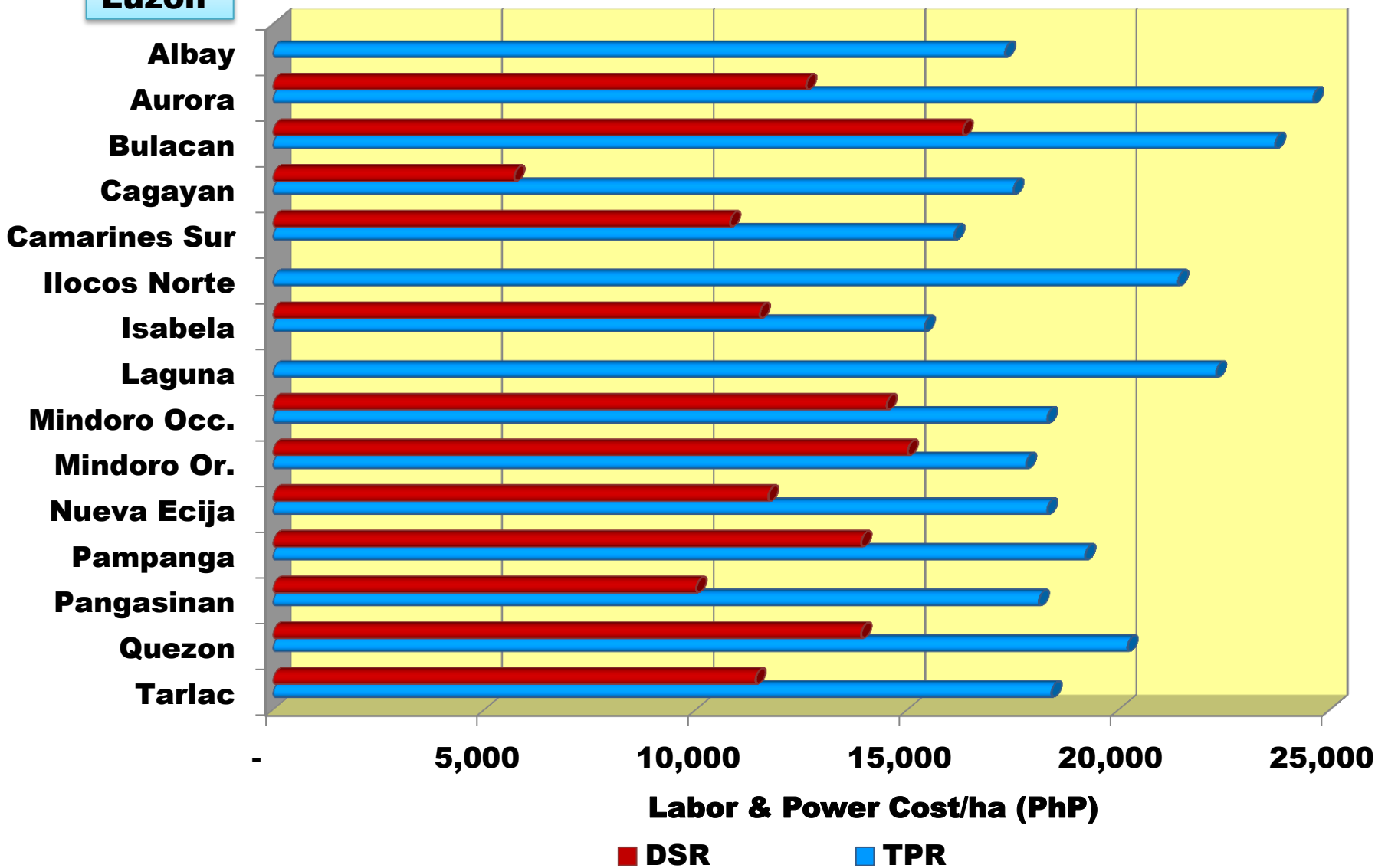


# Total labor & power cost/ha by crop establishment

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## Luzon



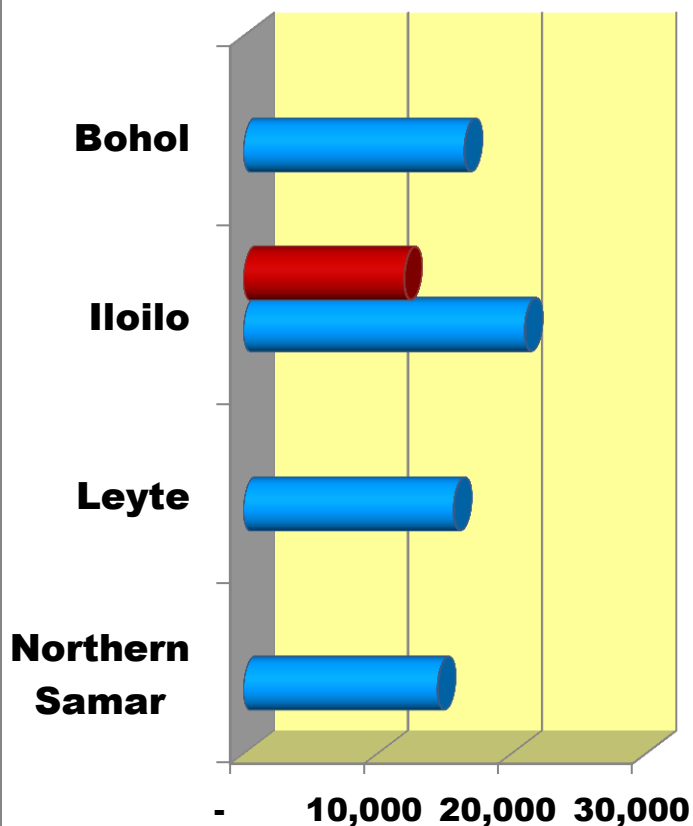
# Total labor & power cost/ha by crop establishment

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## Visayas

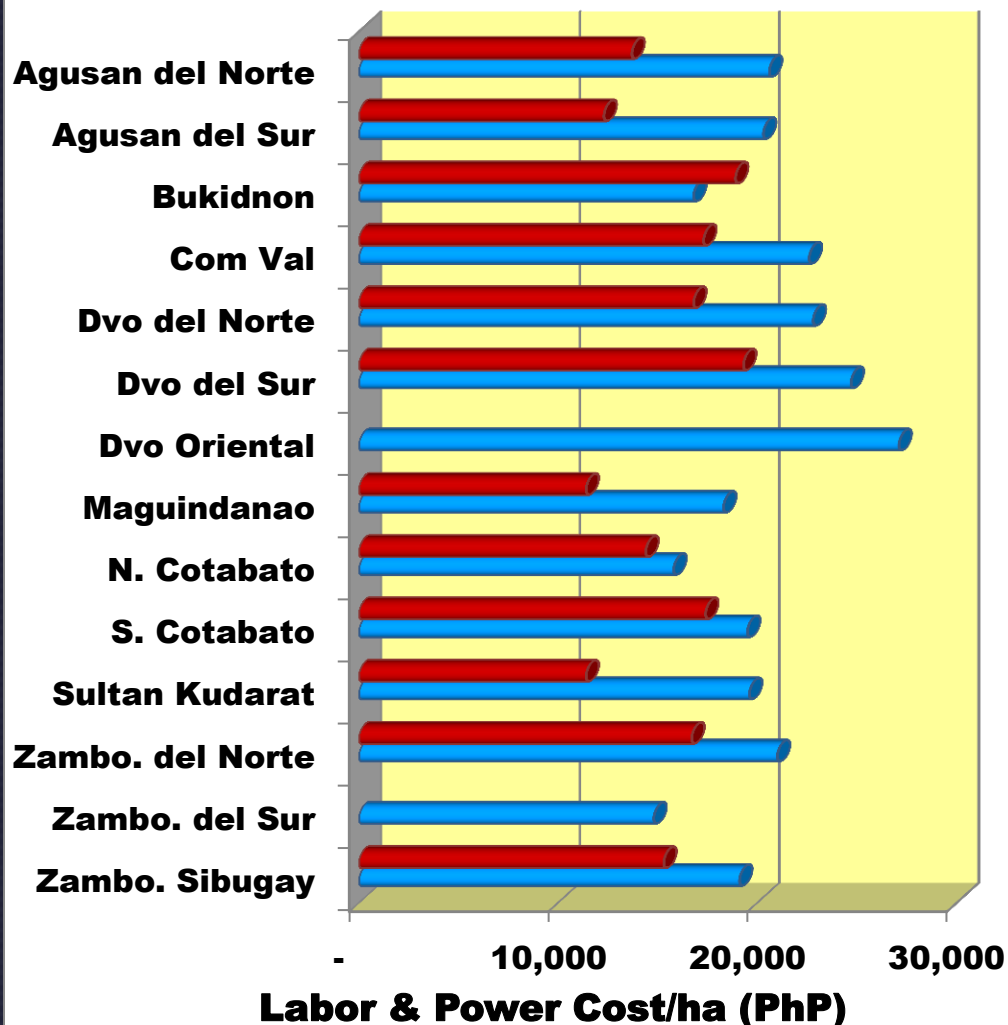
■ DSR ■ TPR



Labor & Power Cost/ha (PhP)

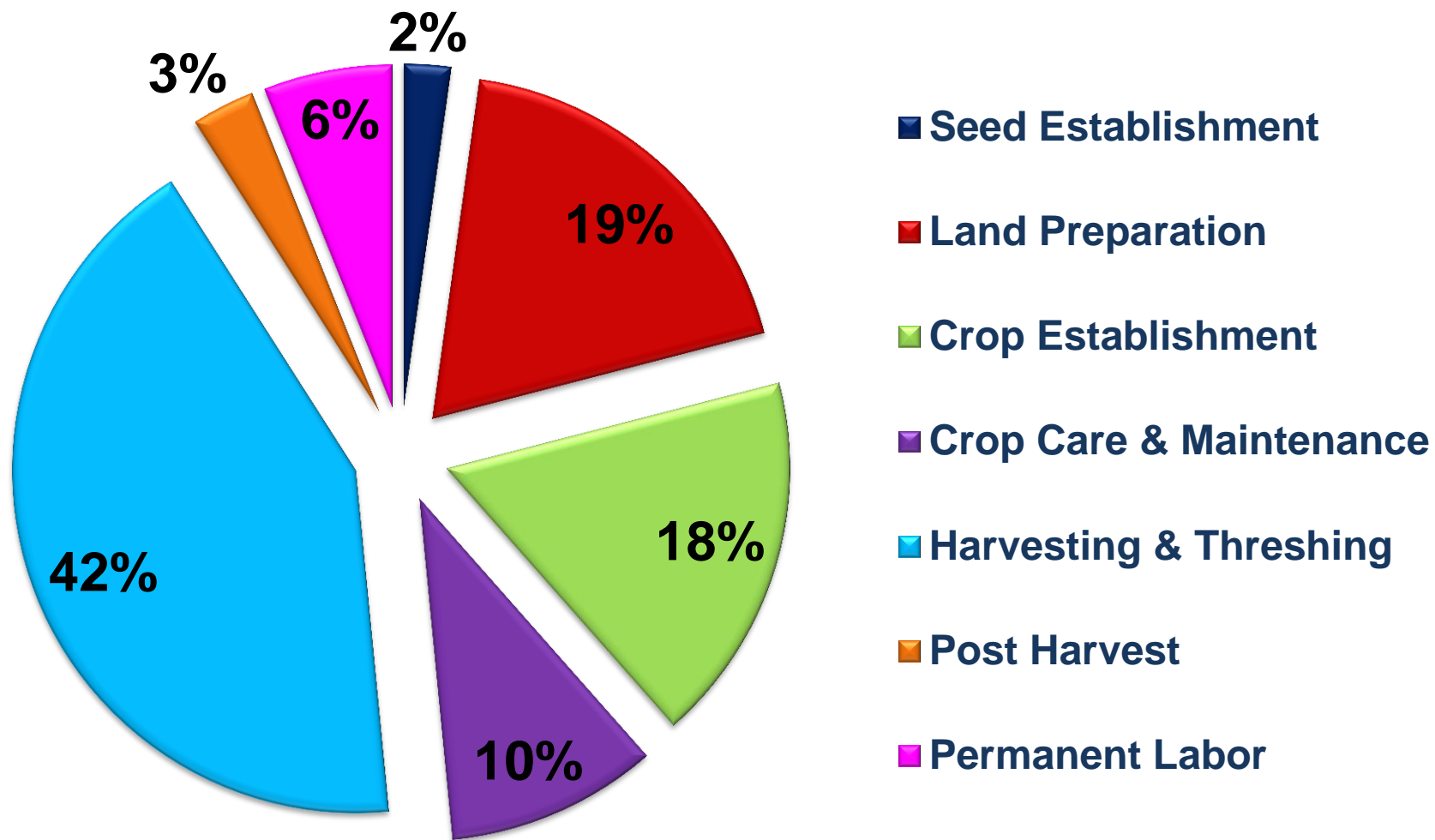
## Mindanao

■ DSR ■ TPR



Labor & Power Cost/ha (PhP)

## Labor & power cost distribution by major activity



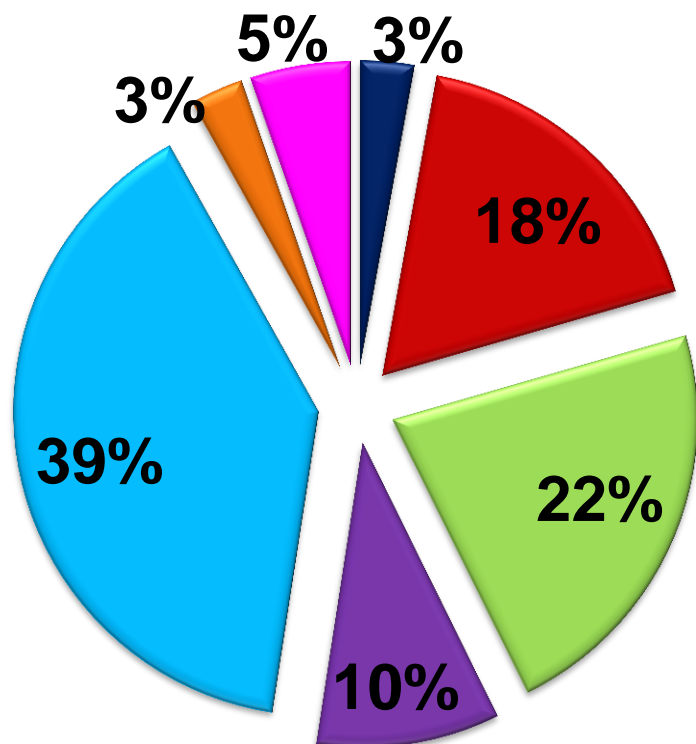
**Ave. Labor & Power Cost/ha = PhP 17,000**

# Labor & power cost distribution by crop establishment

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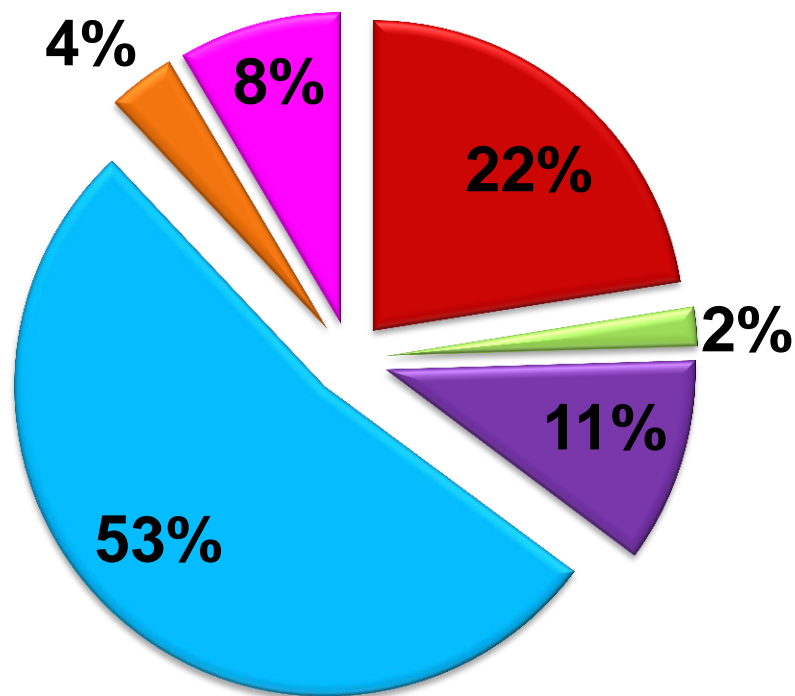
**Ave. Labor & Power Cost/ha = PhP 19,000**



**TPR**

- Seed Establishment
- Crop Establishment
- Harvesting & Threshing
- Permanent Labor

**Ave. Labor & Power Cost/ha = PhP 14,000**



**DSR**

- Land Preparation
- Crop Care & Maintenance
- Post Harvest



# Power usage by type of labor activity

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Type	Usage	
	(freq)	(%)
<b>Land Preparation</b>		
Manual	296	12.34
Handtractor & Four-wheel tractor	2,103	87.66
<b>Direct Seeding</b>		
Manual	2,396	99.87
Drumseeder	3	0.13



# Power usage by type of labor activity

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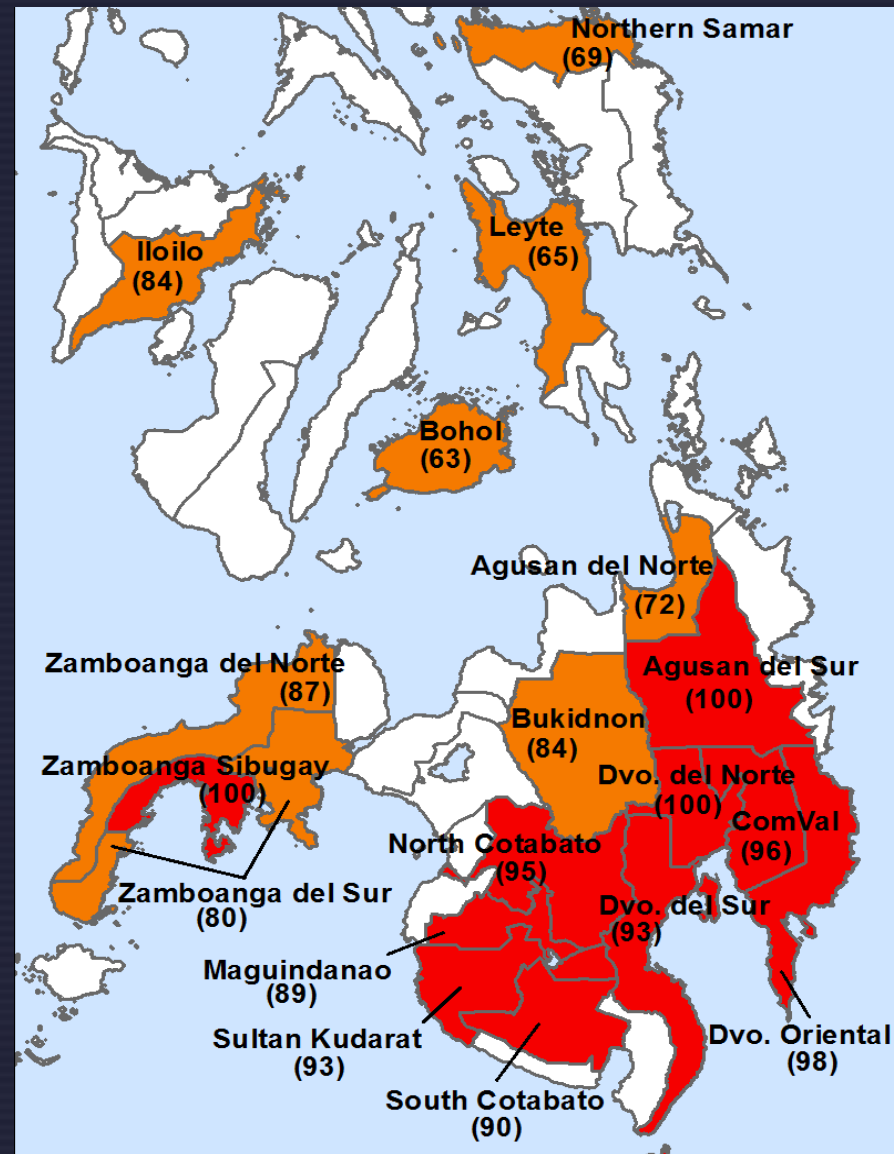
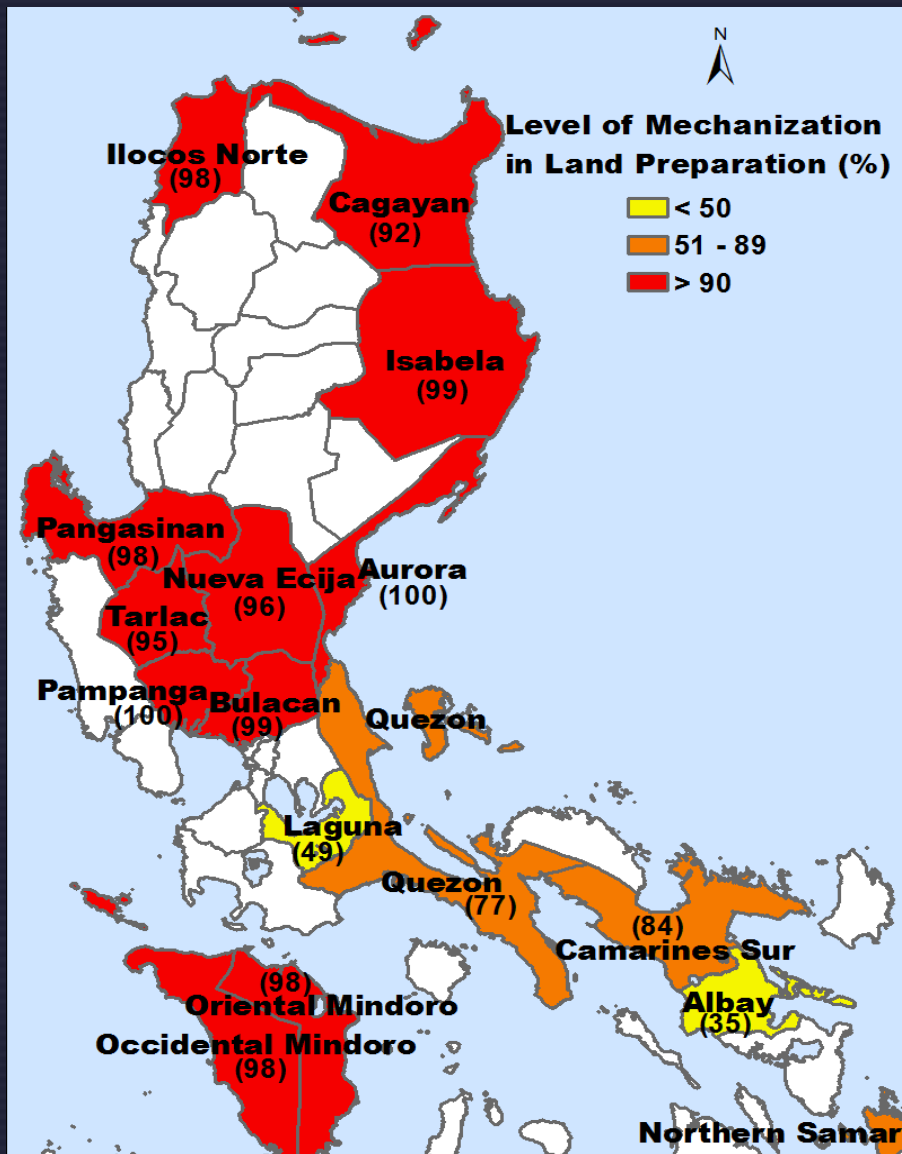


Type	Usage	
	(freq)	(%)
<b>Harvesting</b>		
Manual	2,368	98.71
Mechanical Reaper	23	0.96
Combined Harvester-Thresher	8	0.33
<b>Threshing</b>		
Manual	249	10.38
Thresher	2,142	89.29
Combined Harvester-Thresher	8	0.33

# Level of mechanization (land preparation)

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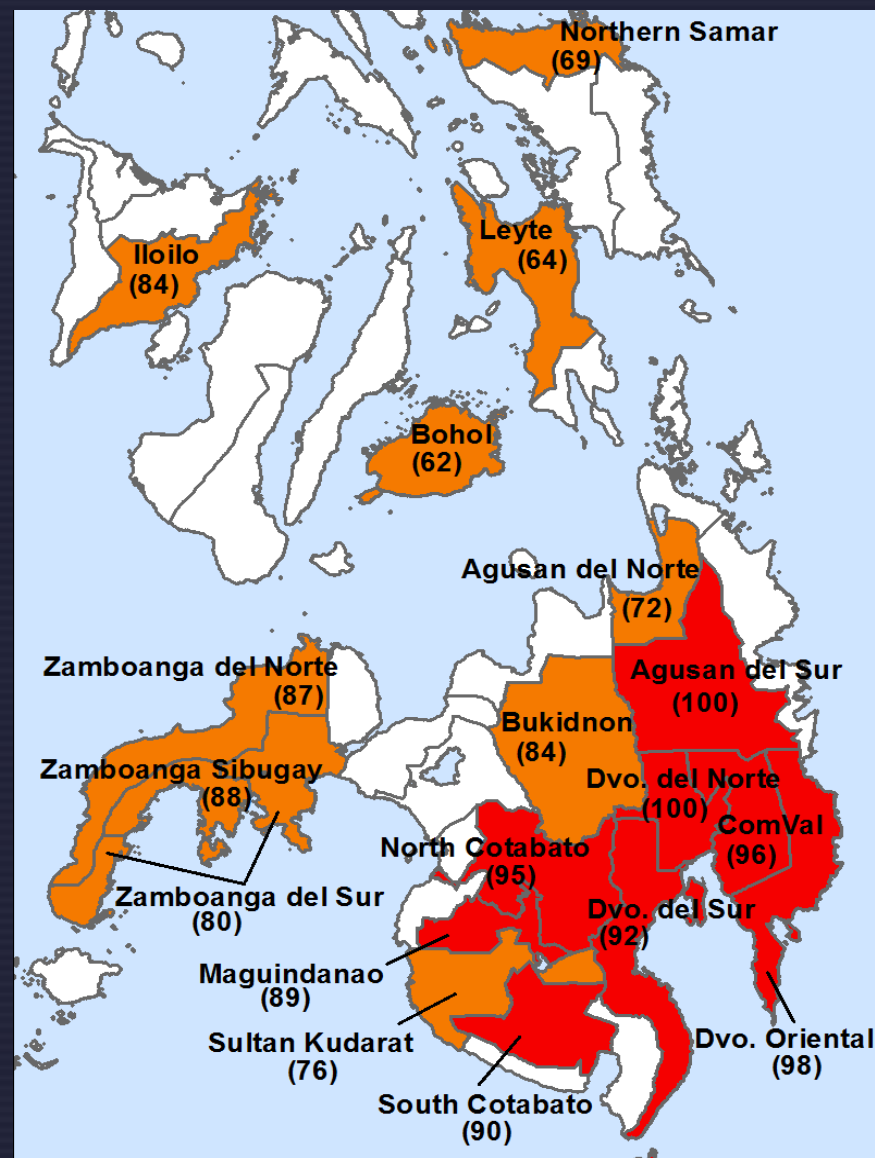
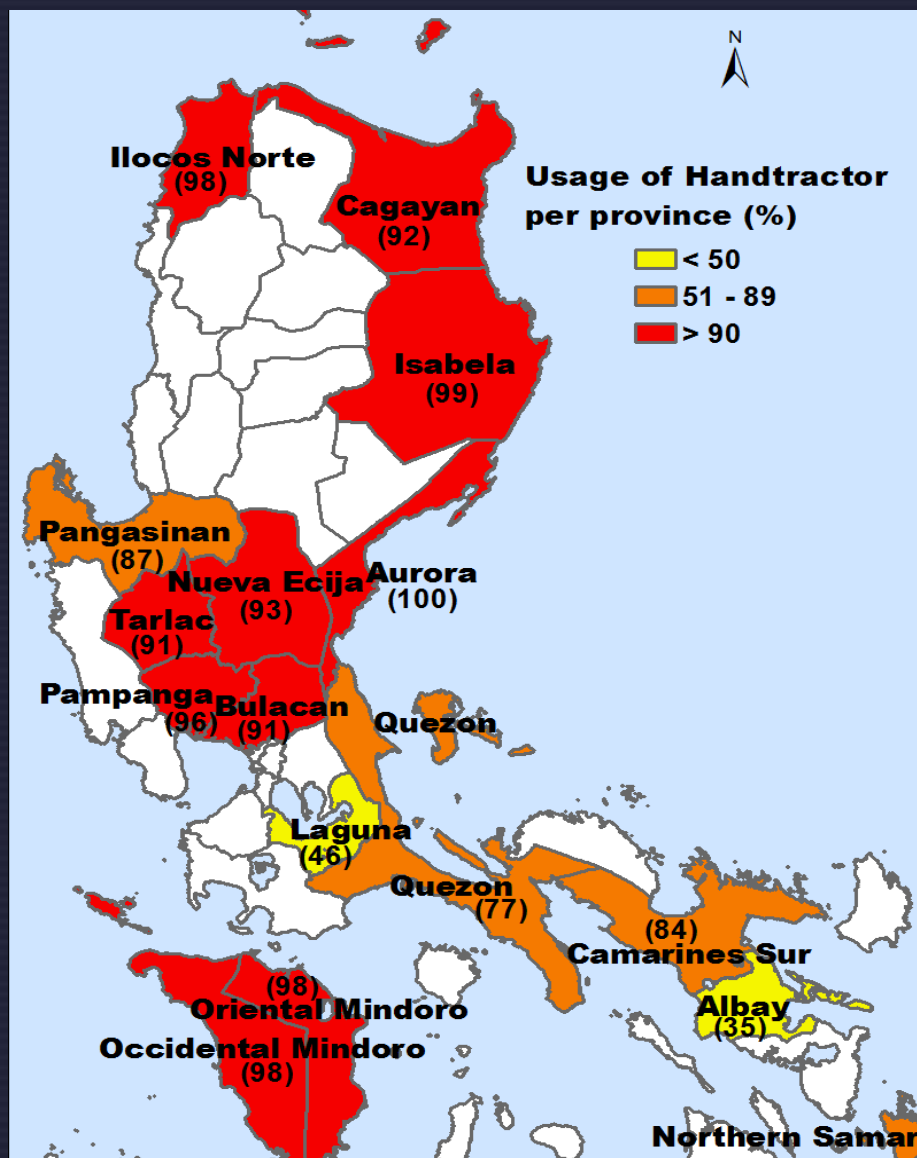
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# Usage of handtractor

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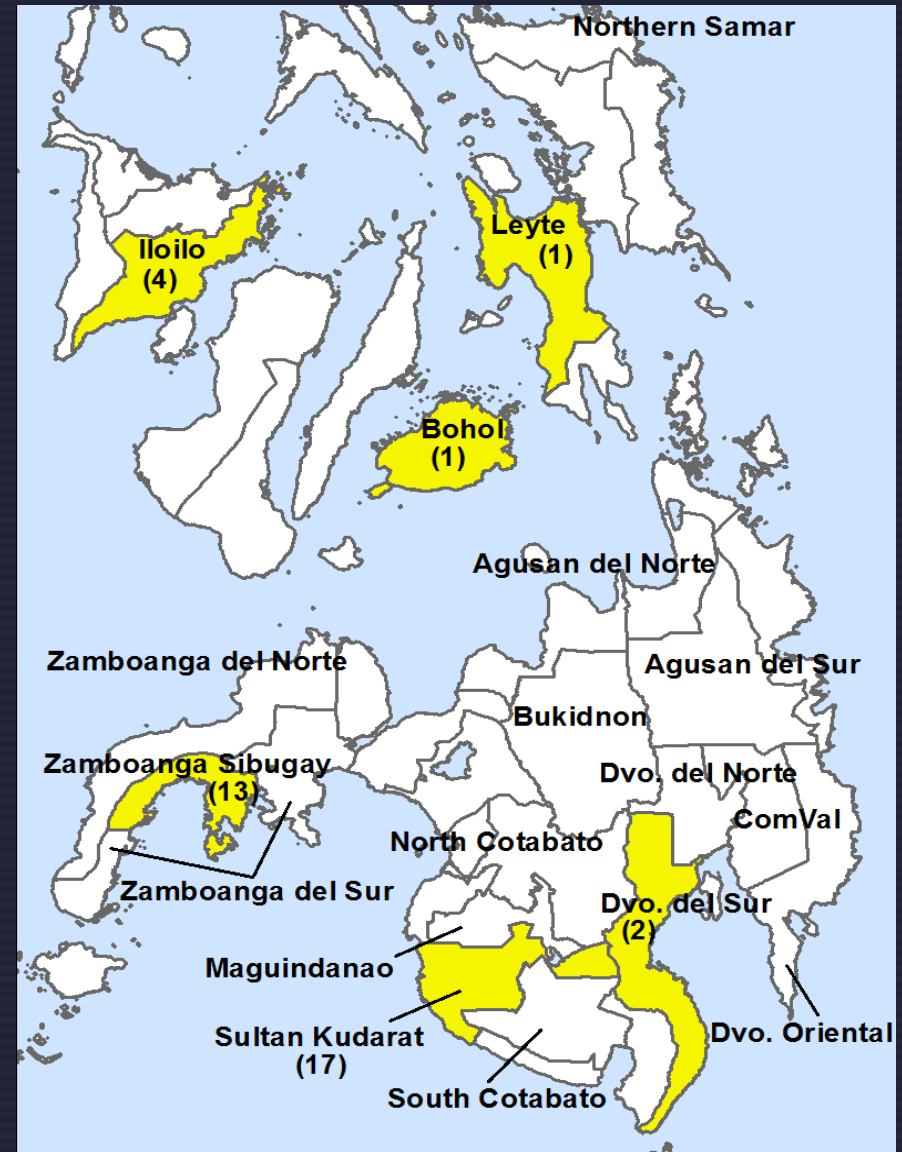
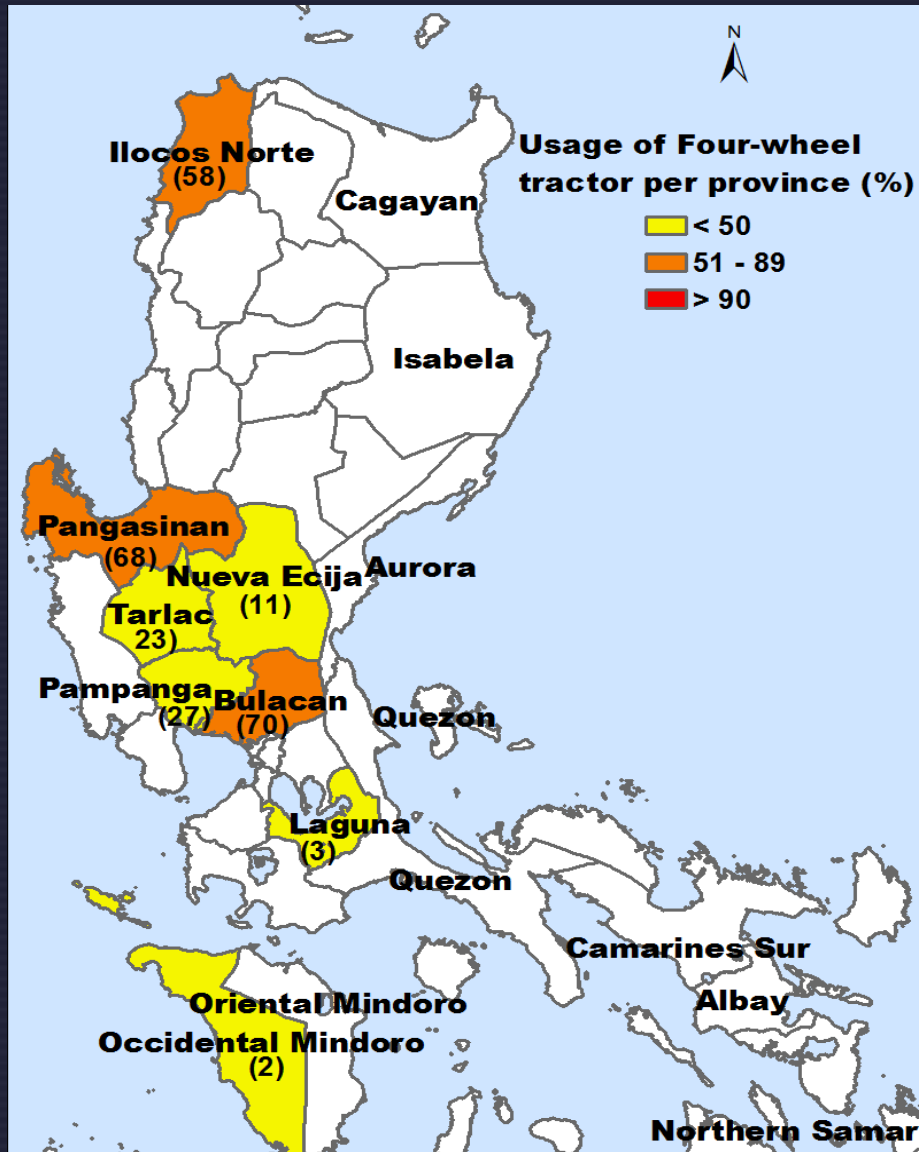




# Usage of four-wheel tractor

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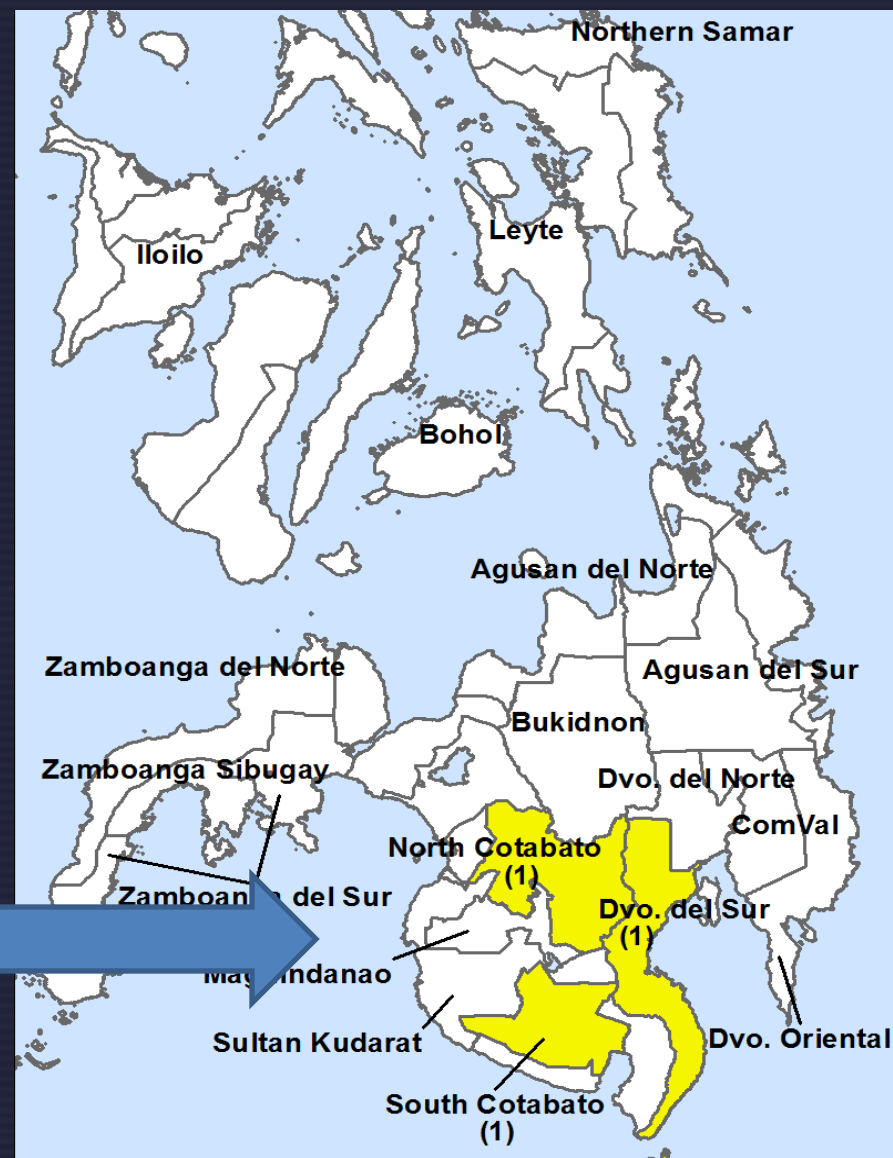
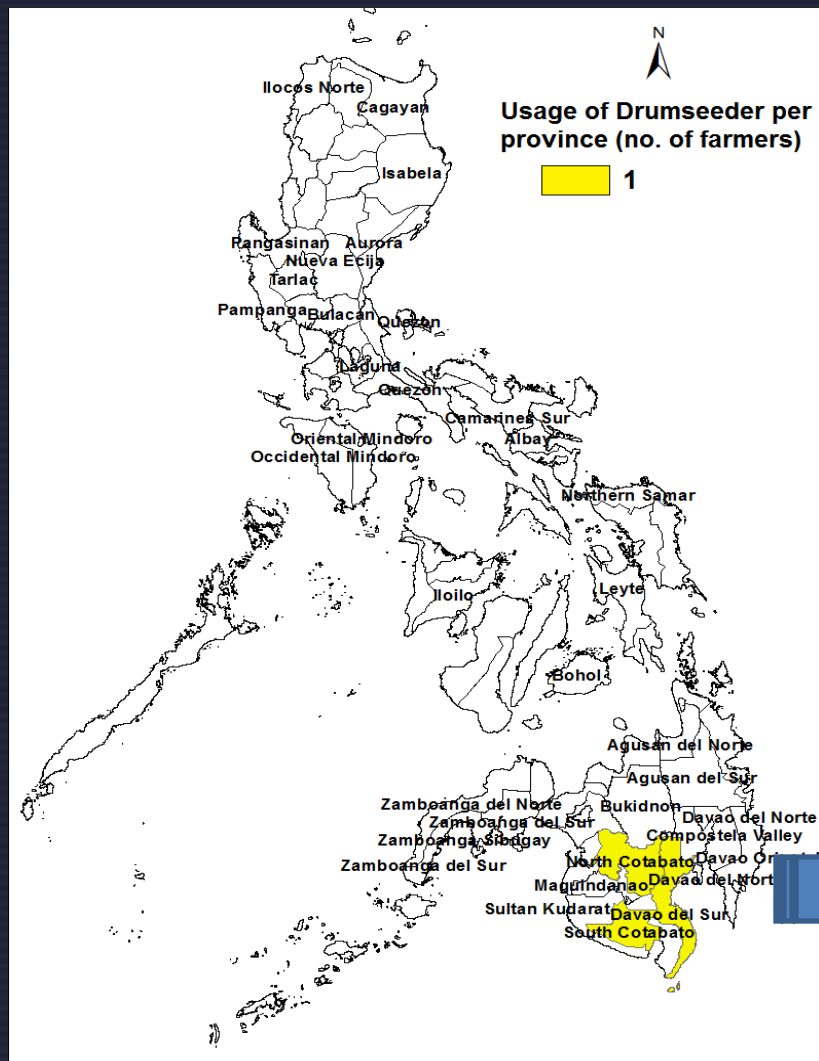
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# Usage of drumseeder

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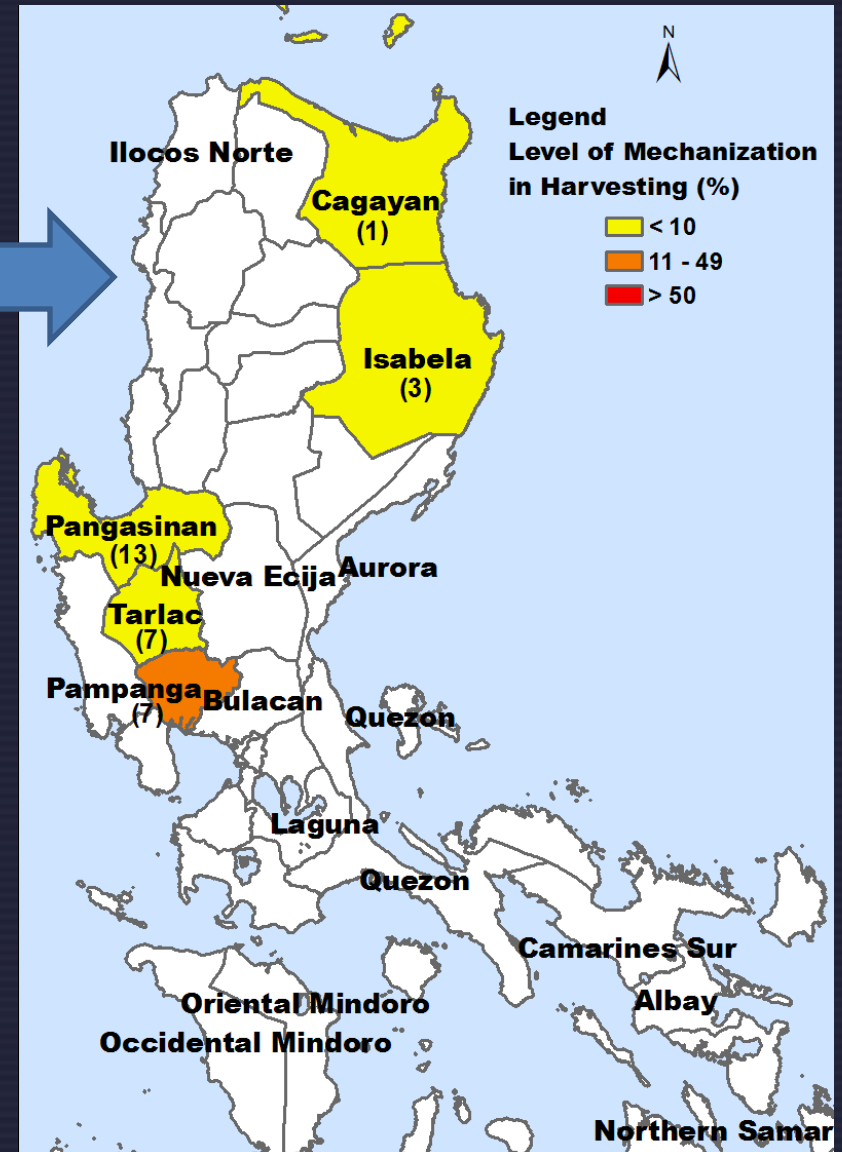
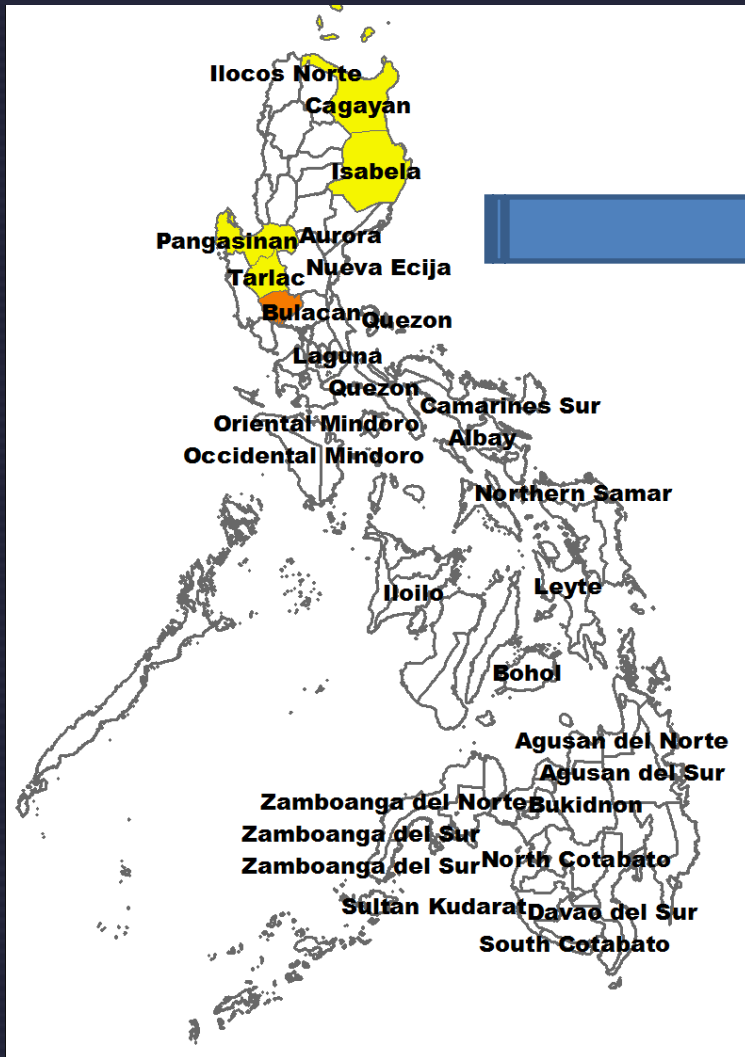
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# Level of mechanization (harvesting)

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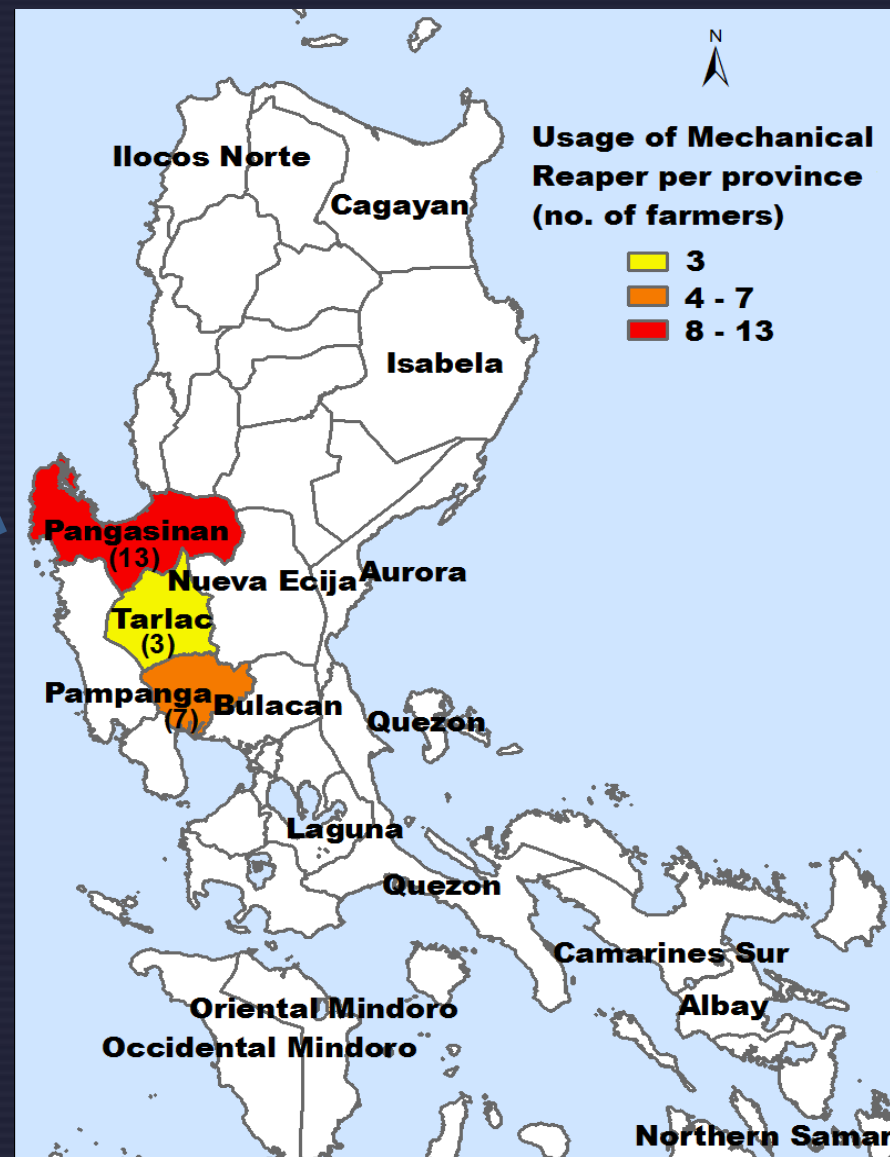
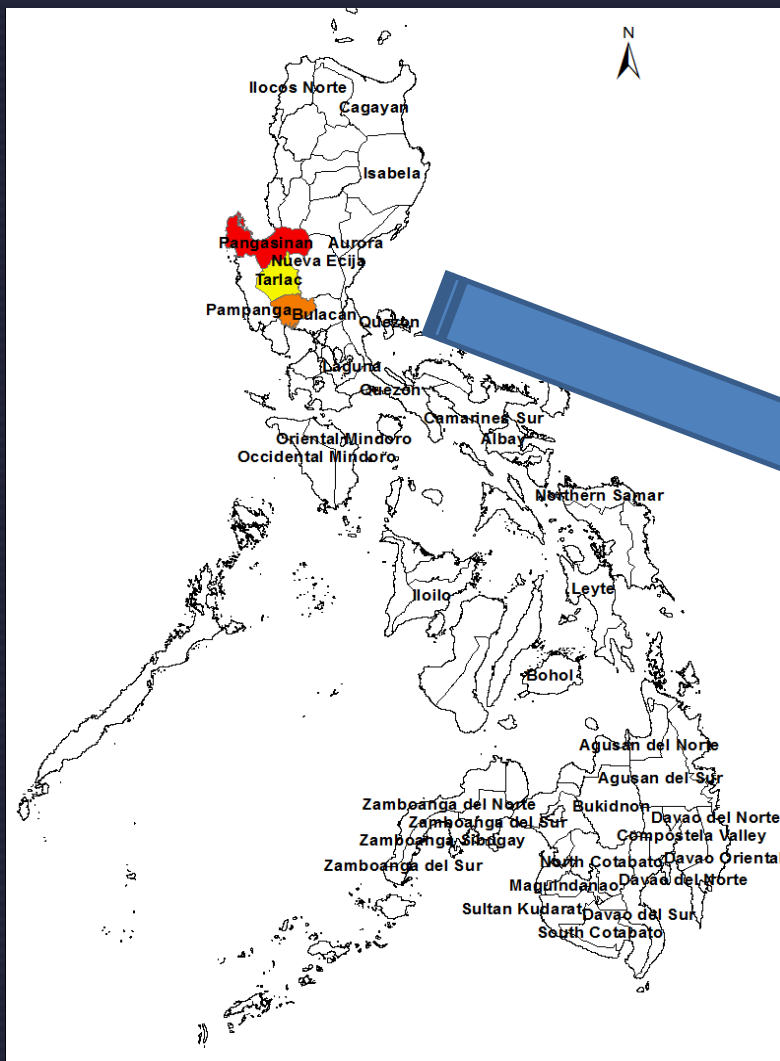
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# Usage of mechanical reaper

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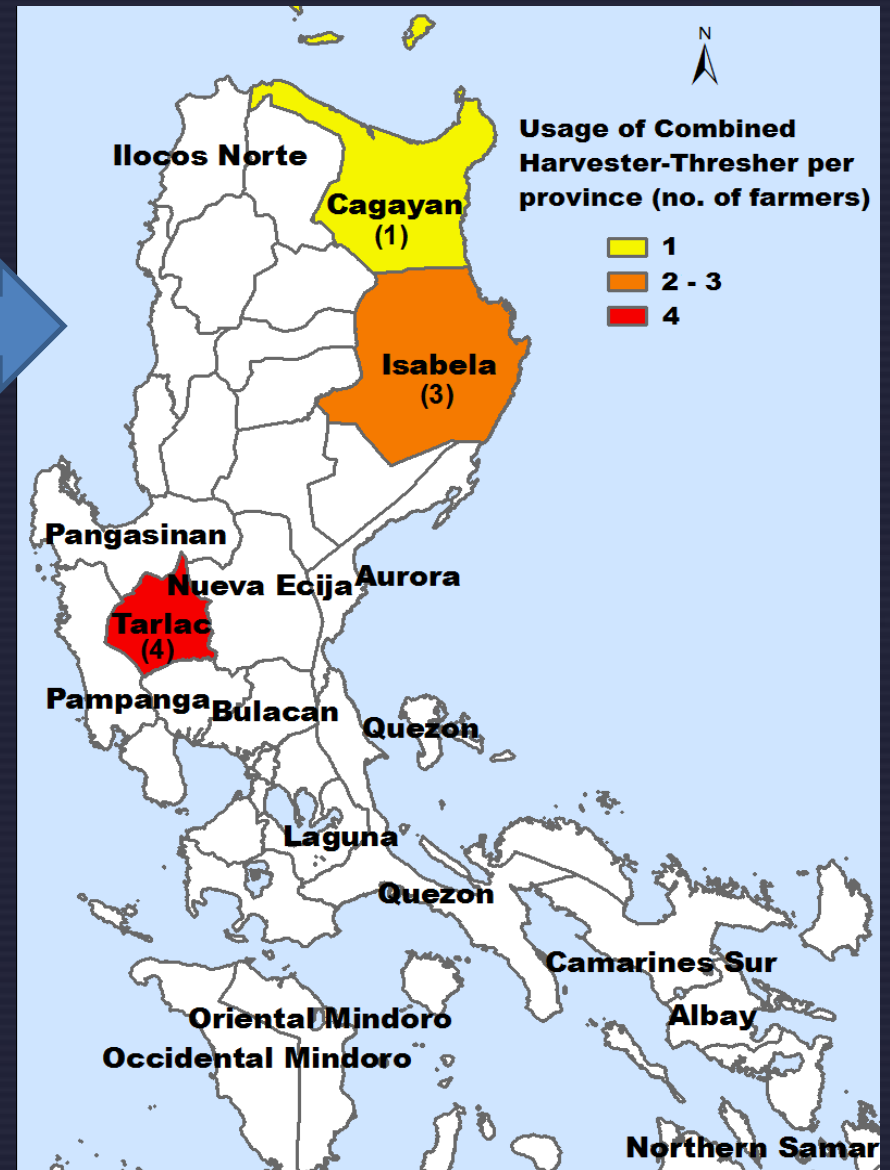
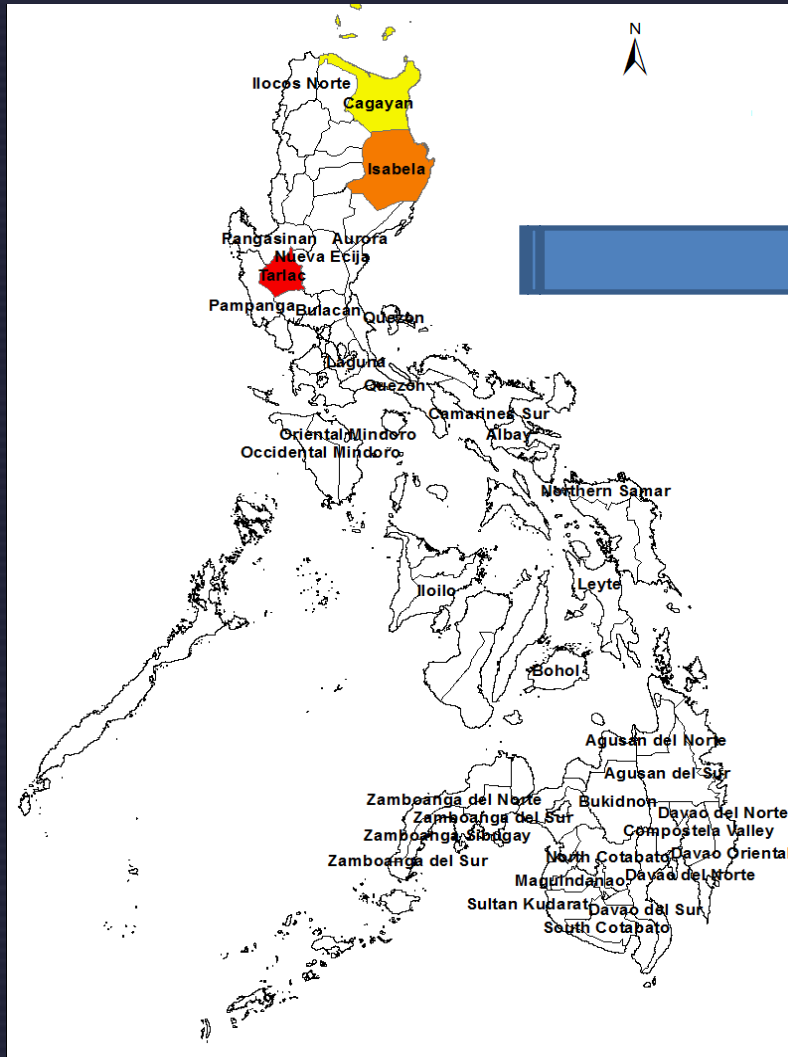
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# Usage of combined harvester-thresher

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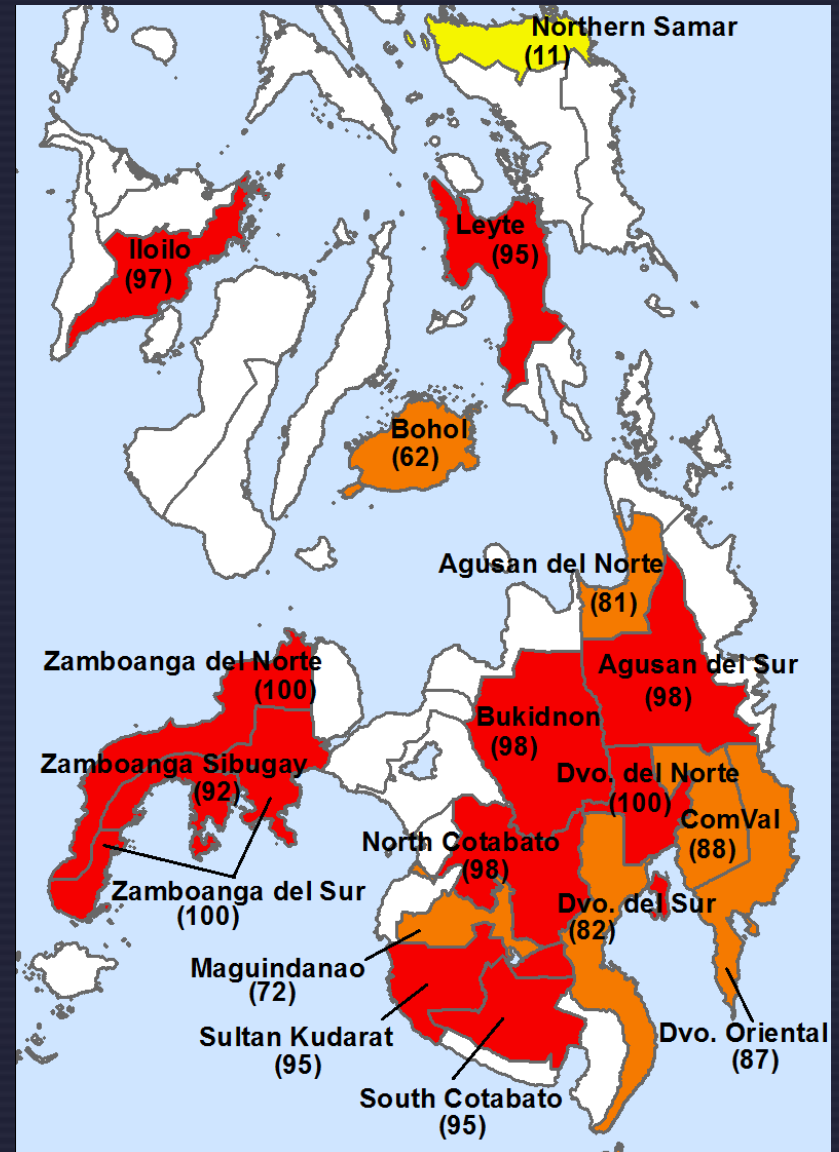
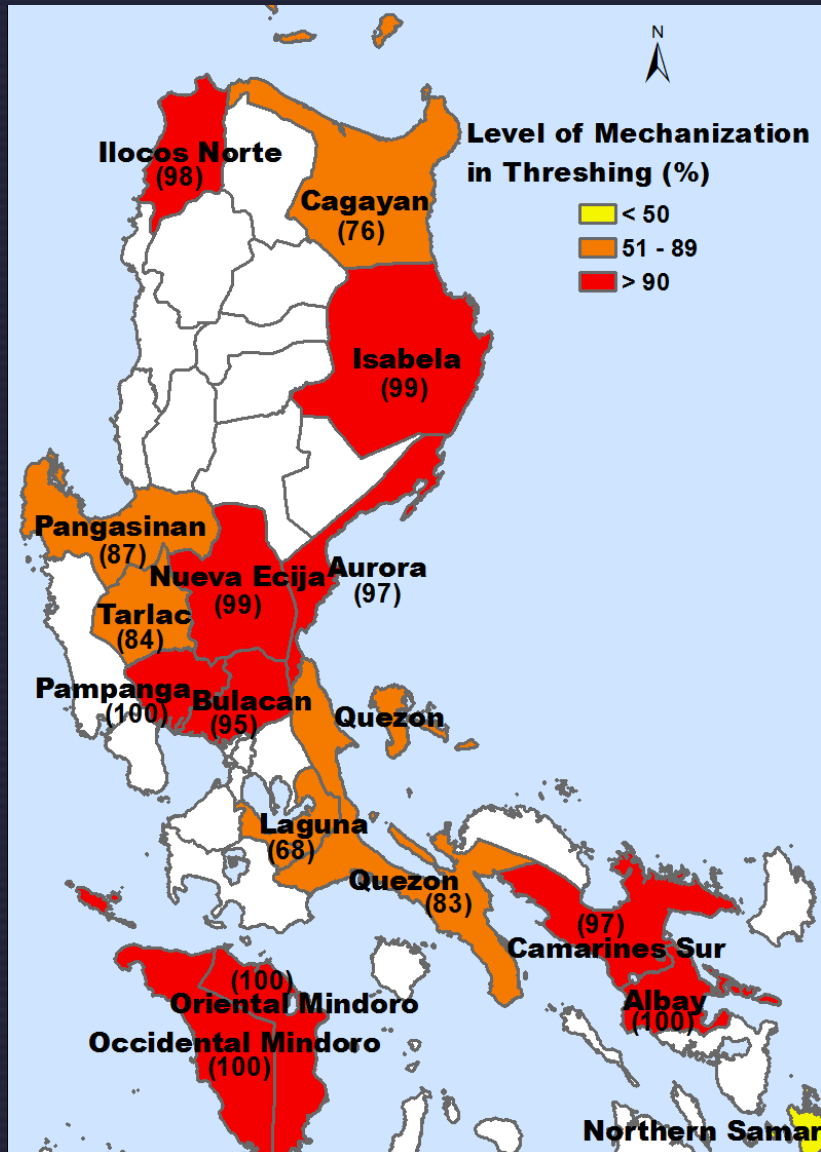




# Level of mechanization (threshing)

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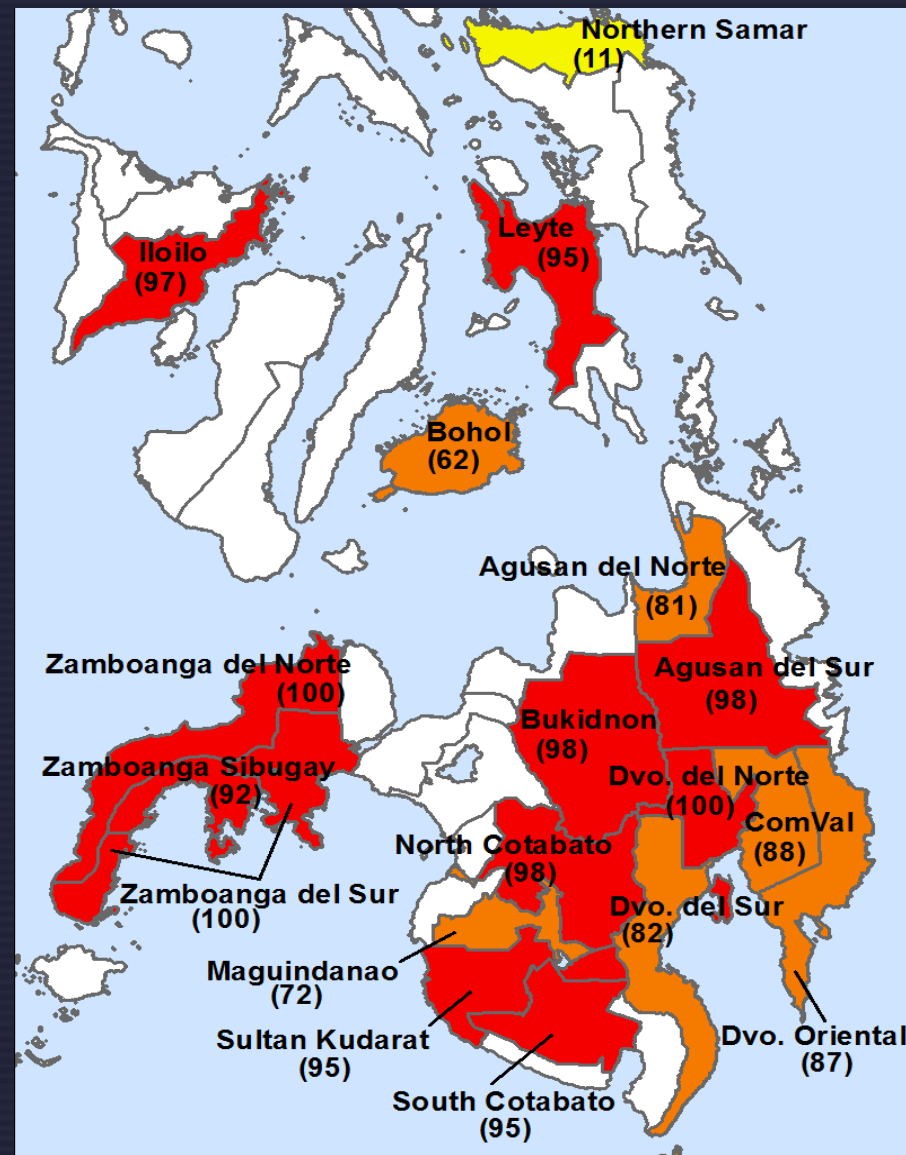
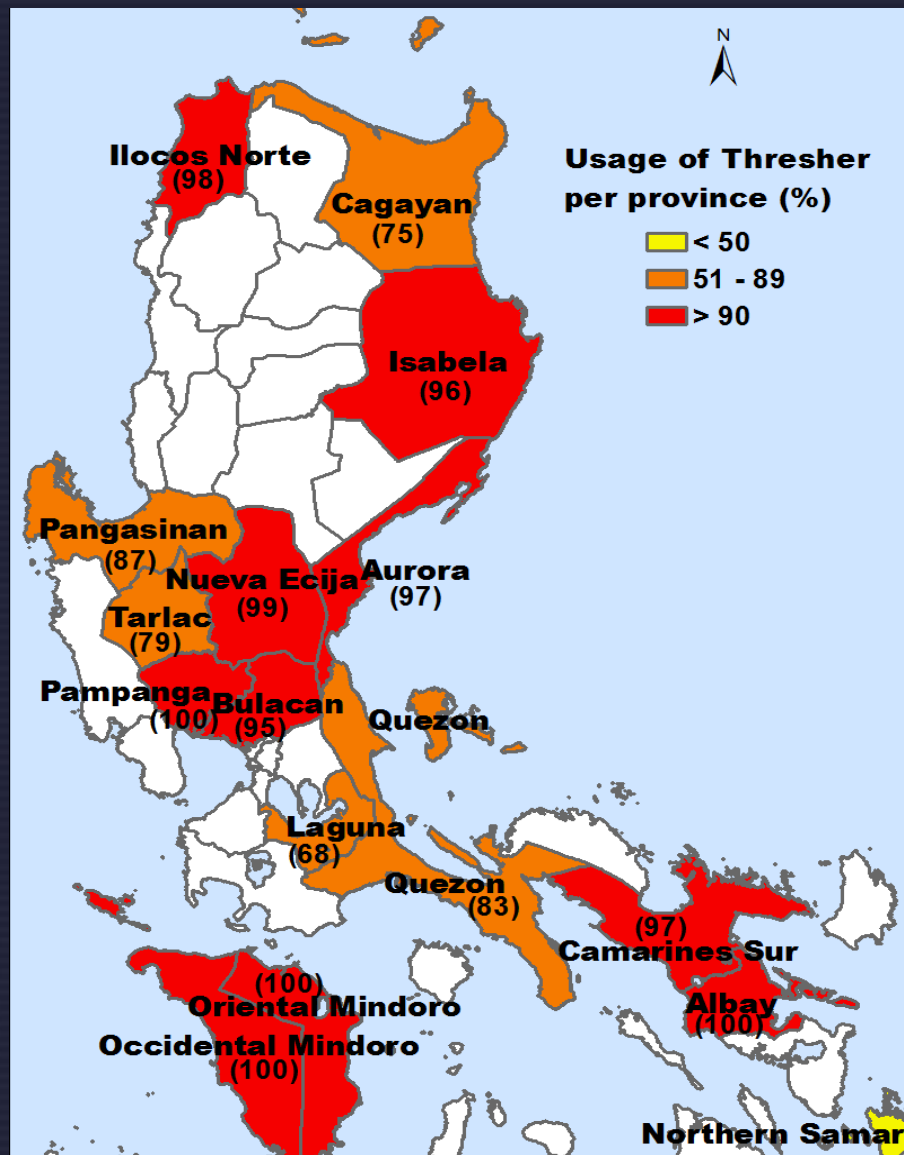
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# Usage of thresher

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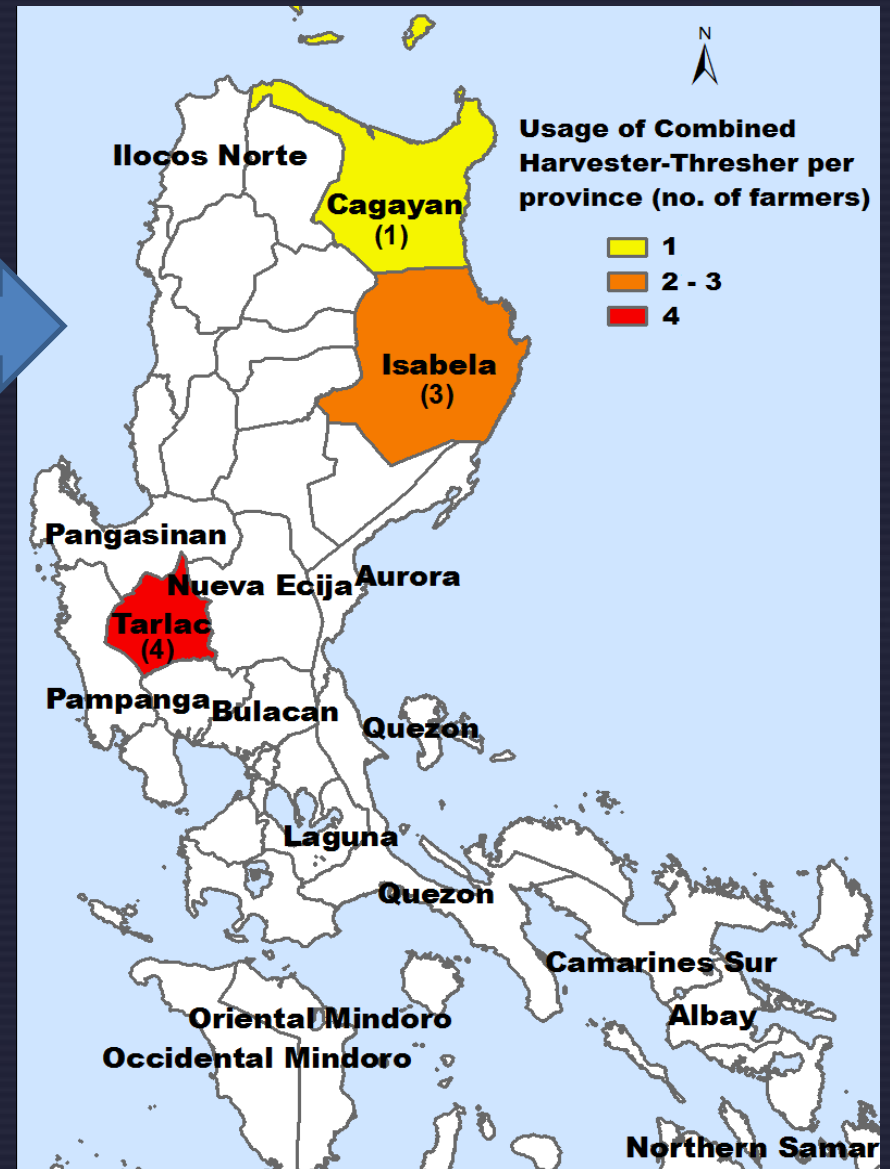
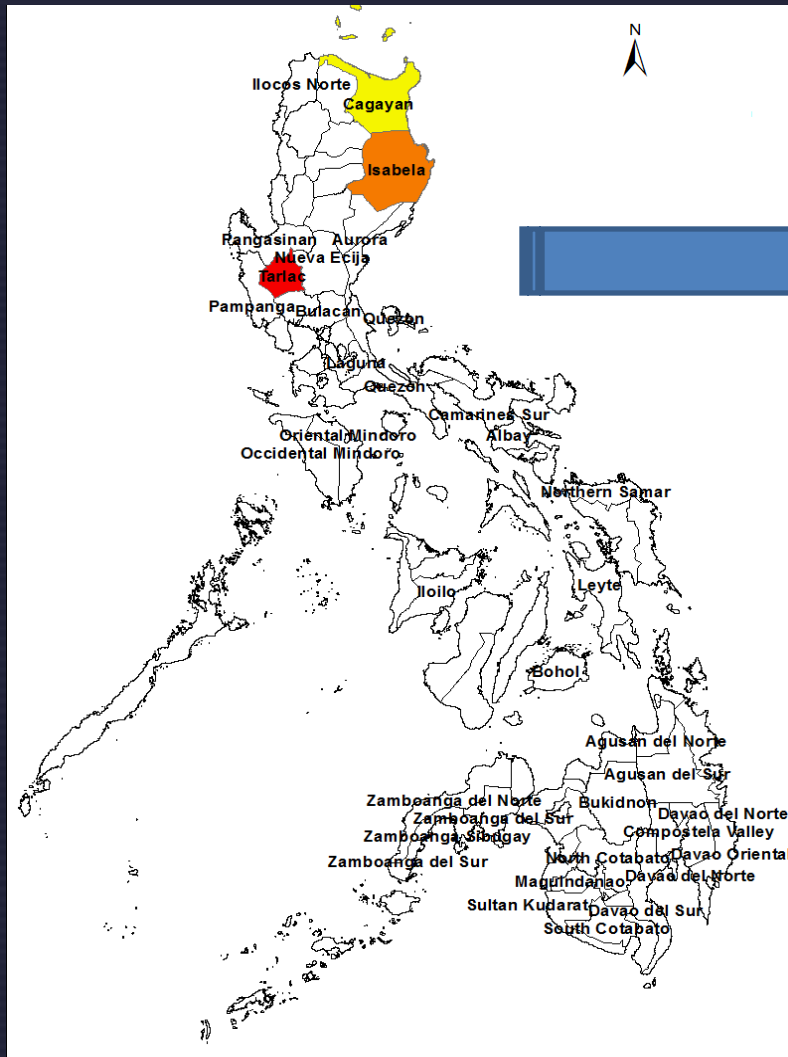
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# Usage of Combined Harvester-Thresher

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# Labor use & costs/ha by type of power usage

Power used	Person-days/ha	Labor & power cost/ha
<b>Land Preparation</b>		
Handtractor & Four-wheel tractor	9	3,208
Manual	12	3,498
<b>Crop Establishment</b>		
Drumseeder	1	63
Transplanting	21	4,157
Manual Seeding	1	280
<b>Harvesting</b>		
Mechanical Reaper	9	3,374
Manual	15	4,126
<b>Threshing</b>		
Thresher	4	3,243
Manual	5	3,135
<b>Harvesting and Threshing</b>		
Combined Harvester-Thresher	4	5,932
Manual Harvesting + Mechanical Thresher	20	7,350



# Points to ponder...

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# Thank You!