

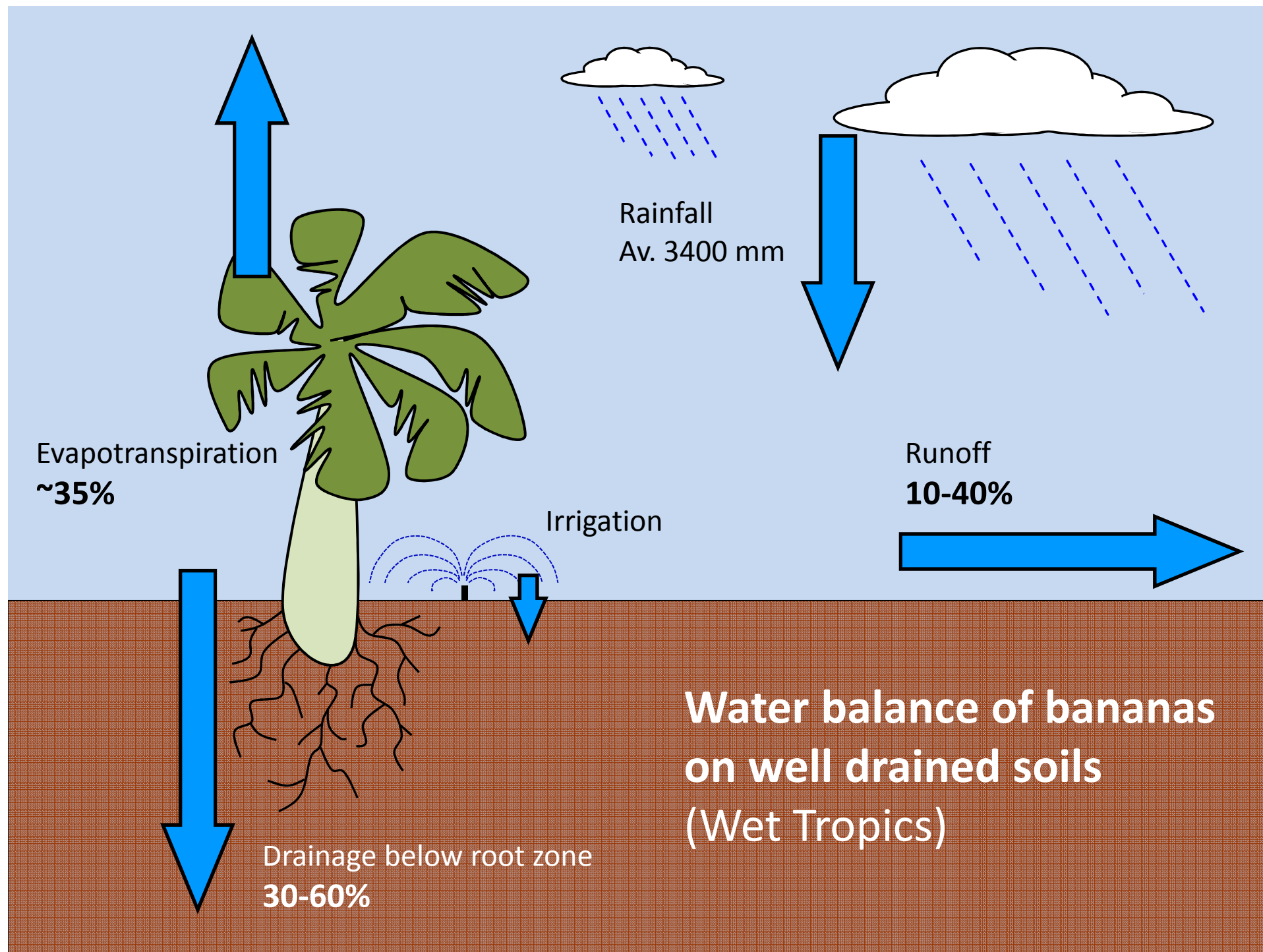
# NUTRIENTS & SEDIMENT...

*Do you know what's happening in  
your banana paddock?*

Christina Mortimore, DNRM

## Paddock to Reef Program 2010-13

John Armour & Bronwyn Masters  
Land and Water Science, DNRM, Mareeba



# Site treatments

## B



- Fertiliser applied by fertigation, fortnightly
- Groundcover (when possible)

## C



- Fertiliser surface broadcast, monthly
- No groundcover



# WHAT?

## Runoff

Year	Rainfall (mm)	Runoff (% of measured rainfall)	
		B (Grassed inter-row)	C (Bare inter-row)
1	5300	33	44
2	3800	13	28
3	2000	20	23

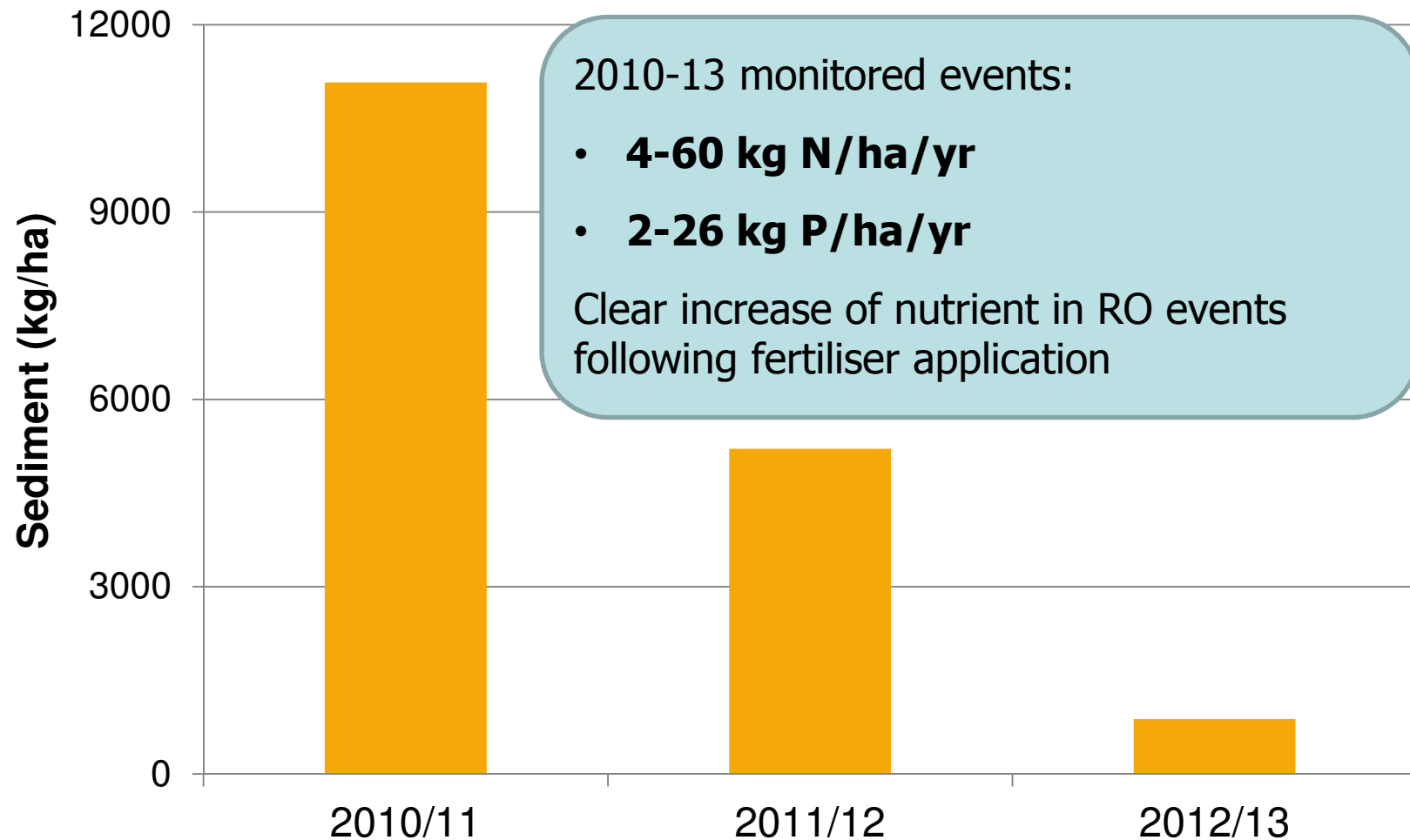


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SO WHAT?

## Sediment losses in surface water runoff



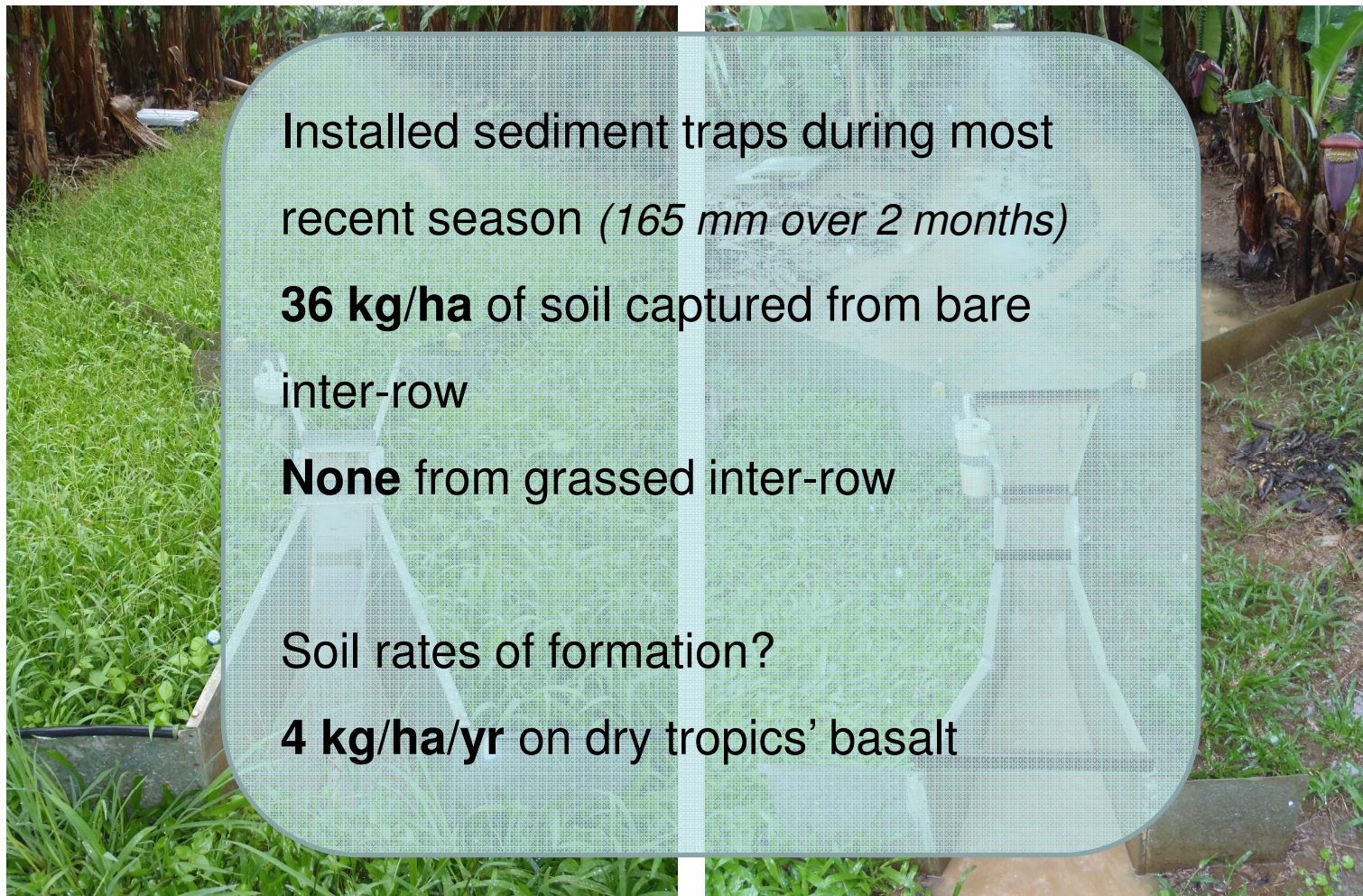
**C site**

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# NOW WHAT?

## Importance of inter-row maintenance

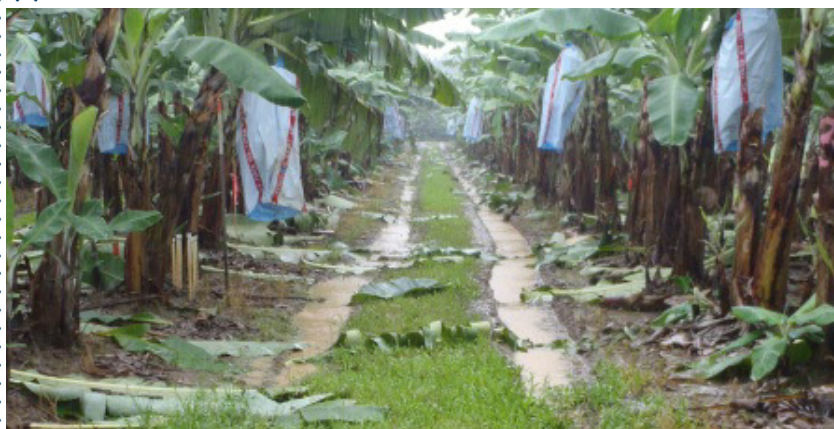




# WHAT?

## Deep drainage

Year	Rainfall (mm)	Deep drainage (% of measured rainfall)	
		B	C
1	5300	18	22
2	3800	28	31
3	2000	16	20



**B**



**C**

# SO WHAT?

## N rate and Nitrate-N in deep drainage

Monitoring from 2010-13

Rainfall (mm)	N applied (kg/ha)		N load (kg/ha)	
	B	C	B	C
2000-5300	207-343	236-434	2-3	1-5

- Relatively low loads from both sites
- Tight system
  - Recommended rates applied regularly



## NOW WHAT?

### Nutrient management

Trends in fertiliser use for bananas over time...

	1995	2007
N (kg/ha/yr)	520	310 ratoon 260 plant

*Target is 250 per crop cycle = ~ 270-300 kg/ha/yr*

**40% reduction in nitrogen use for ratoon crops**

# SUMMARY

- Sediment loss in runoff is an important challenge for water quality and sustainability
- Inter-row maintenance is key
- Improved control of sediment will reduce nutrient loss
- Deep drainage identified as a major loss pathway on well drained soils
- Recommended rates, applied frequently, greatly reduce the potential for loss