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NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

A pedagogical interface for developing production management practices in Norwegian wood supply

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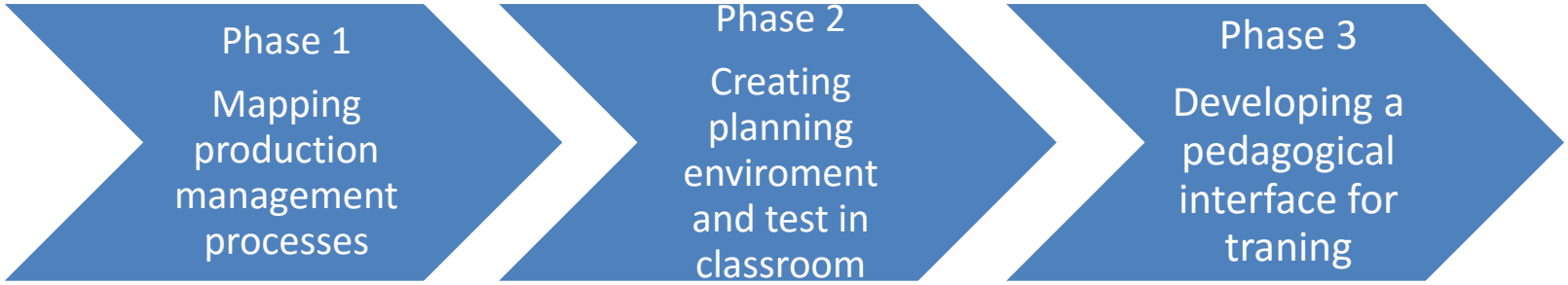
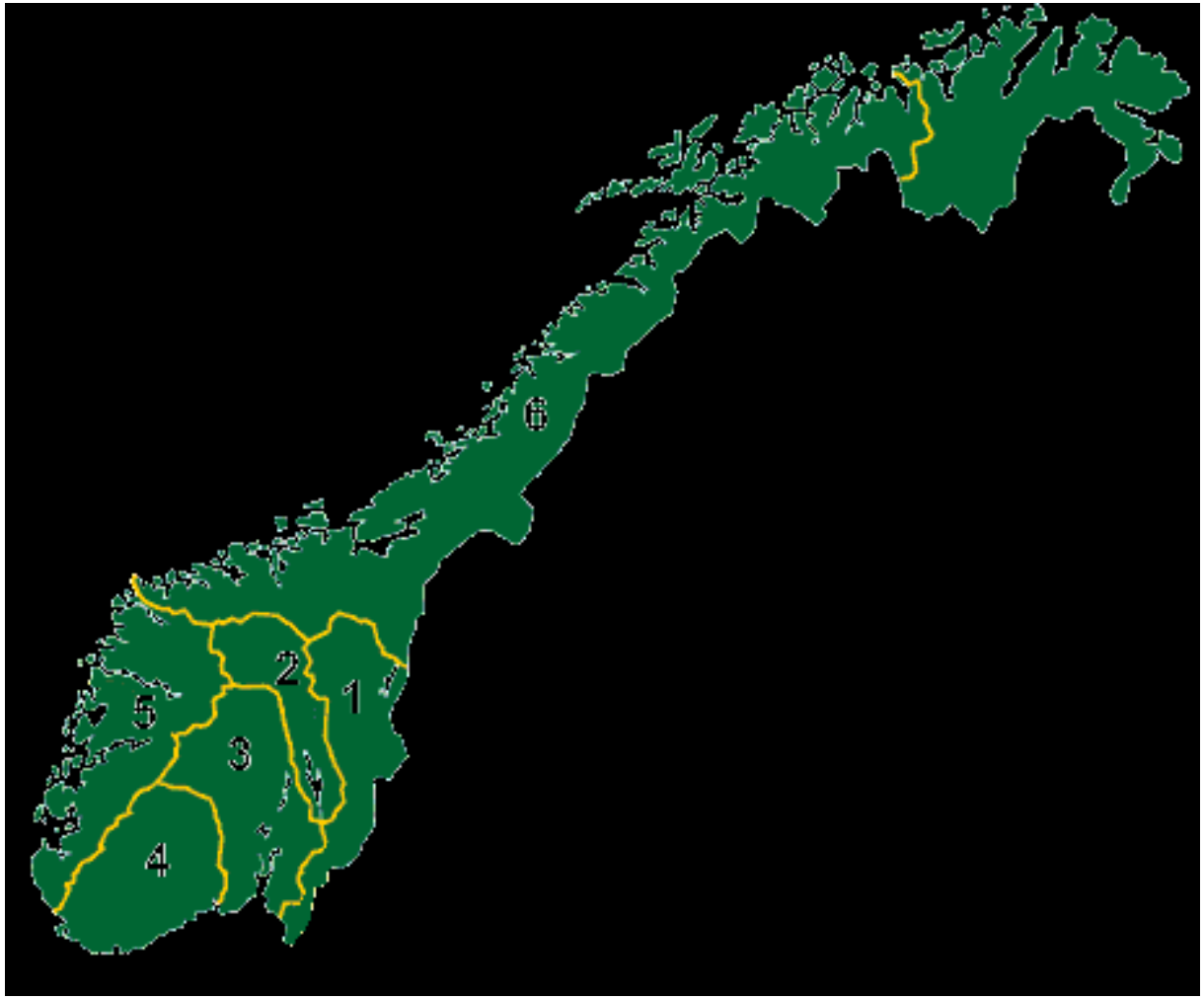
Aim and design

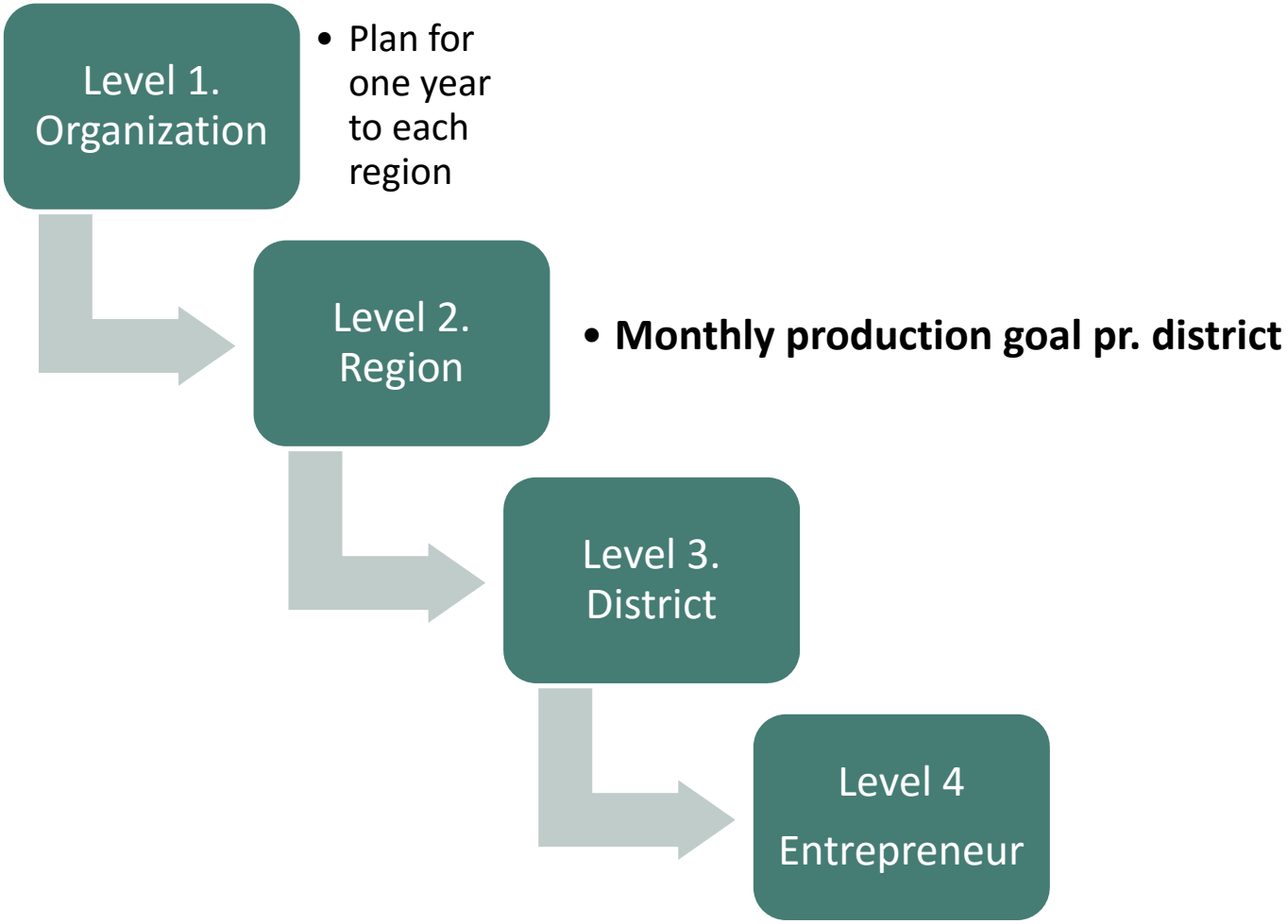
- Mapping, visualizing and improving production management practices in Norwegian wood supply



Forest owner associations in Norway at National and regional level

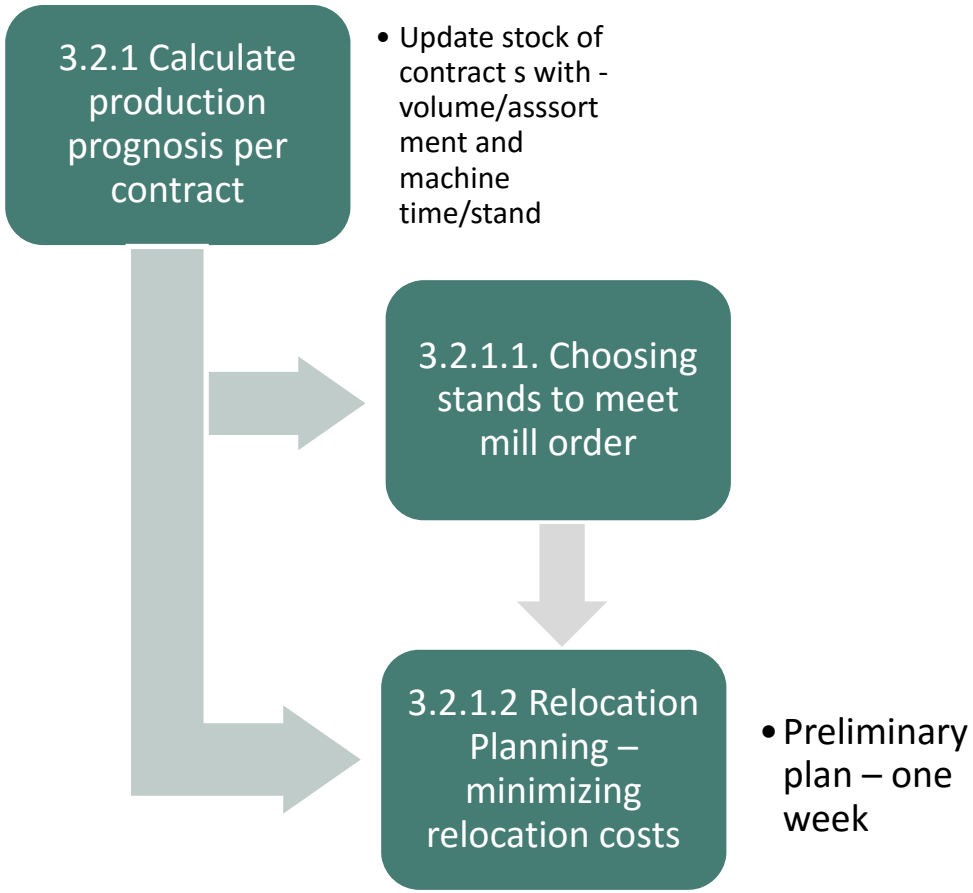


Four Activity Levels



Creation of preliminary plan for one week

Two different ways of working



Bearing capacity in Norway

Class 1 – always available: spring, summer and winter (dry gravel)

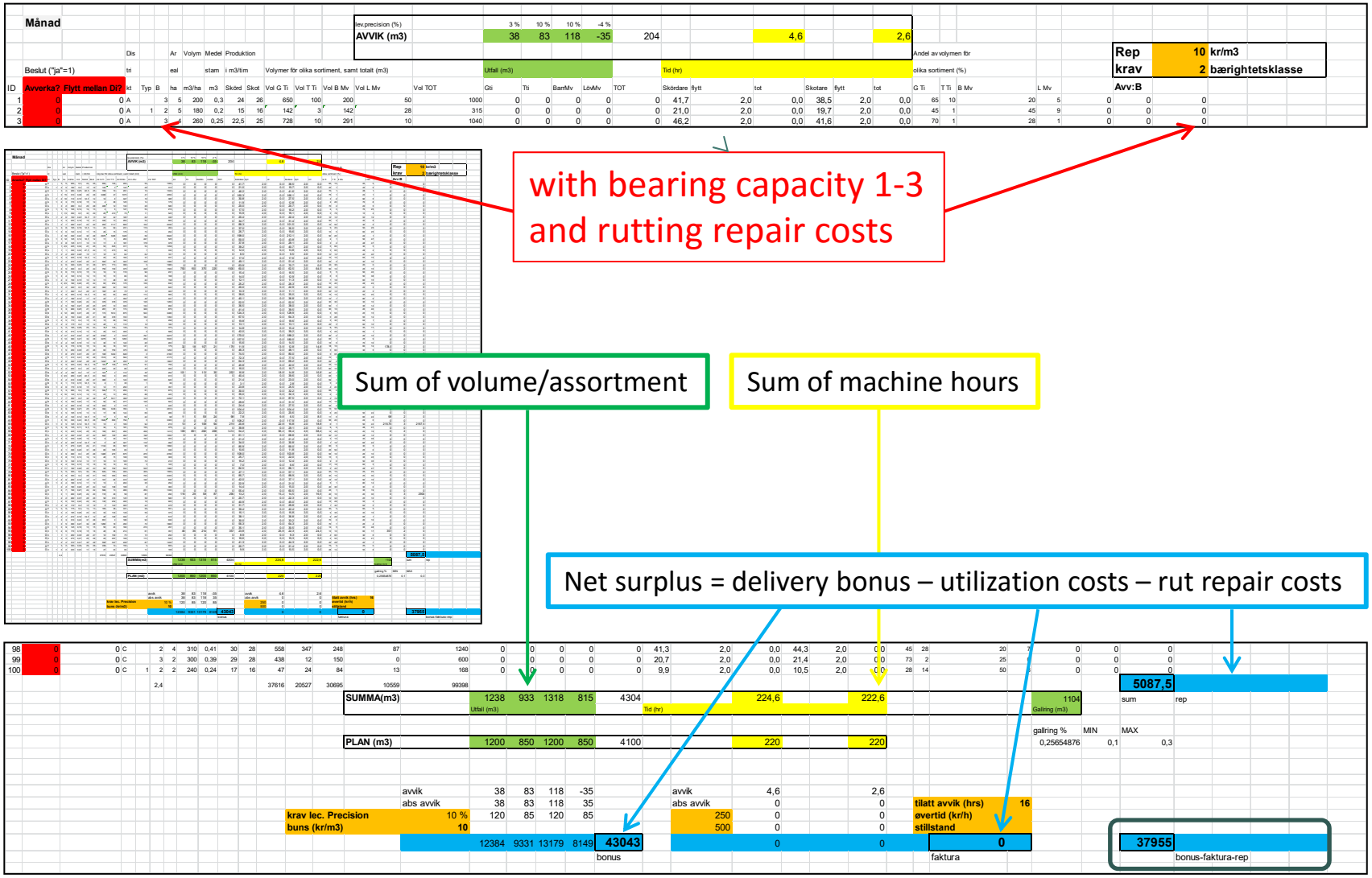
Class 2 – typically available during summer and winter (moist gravel)

Class 3 – only available with winter conditions (wet peat and clay sites)

Planning sheet in excel (in principle)

Contract		Volume per assortment				Machine hours		Ground damage	
No.	Selected?	1	2	3	4	Harvester	Forwarder	Bearing capacity	Costs/operation
1	1							1	
2	0							2	
3	1							3	
4	1							1	
5	0							2	
….i	1							3	
Prognosis									
Goal									
		∑delivery bonus				**∑machine penalty**			**∑repair costs**

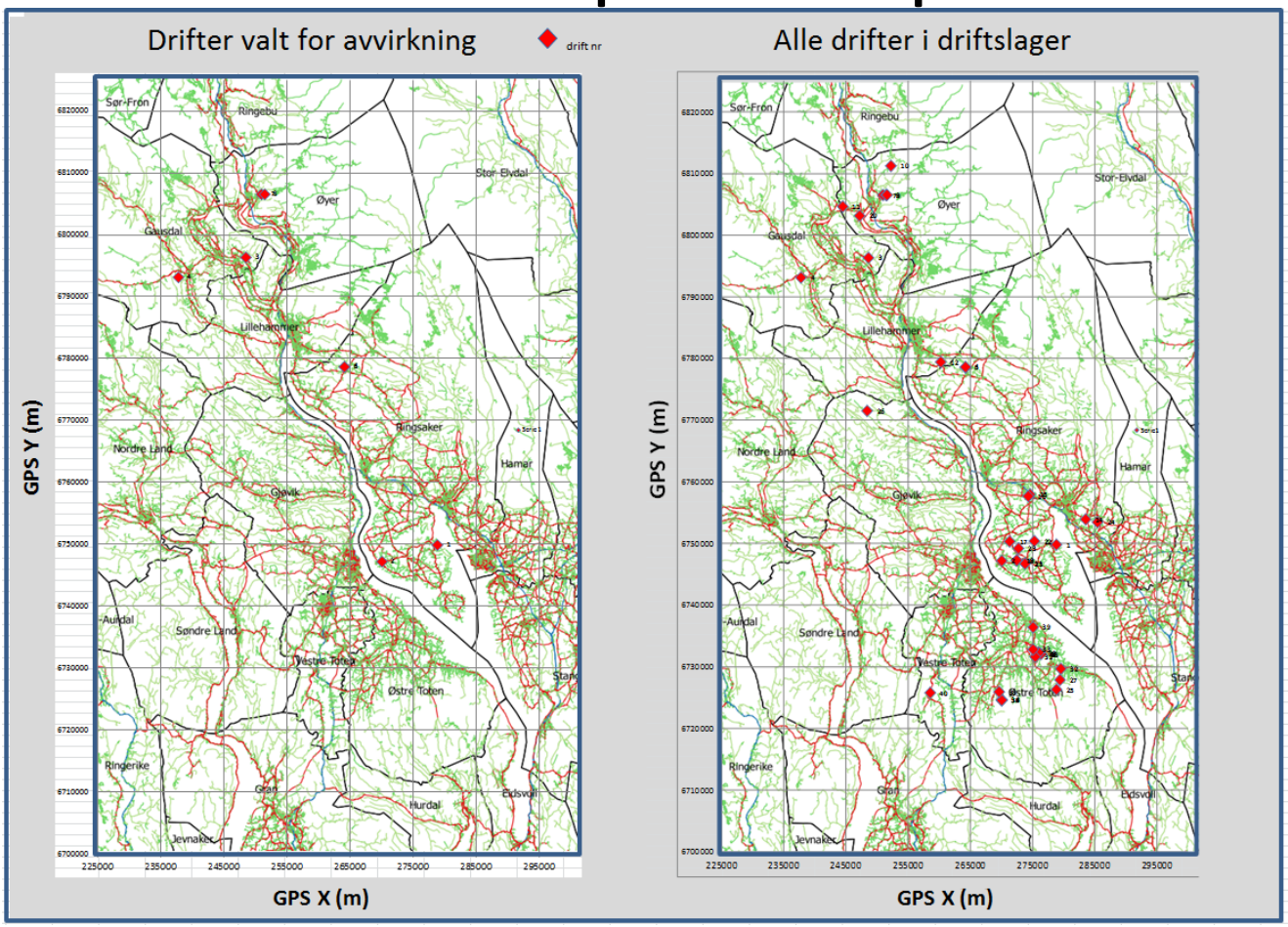
… and in reality



Phase 2

Creating planning enviroment and test in classroom

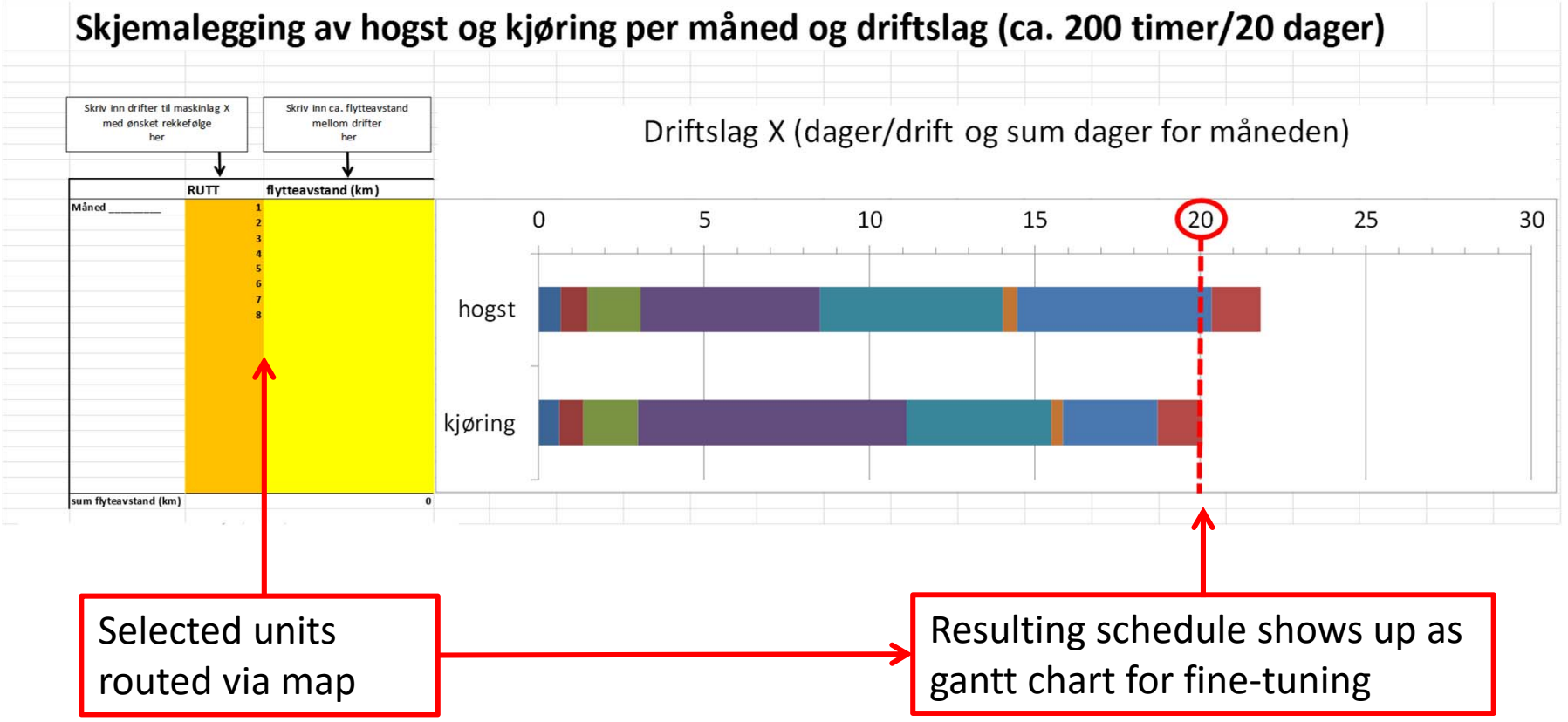
Selected contracts for harvesting period shown up on map



Selected (1)

All units (0,1)

Selected contracts routed with resulting schedule/team



Group work - comparison of results

Groupe	Delivery Bonus	- Machine Penalty	- Ground Repairs	= Net result
1				
2				
3				
4				
5				
6				
7				
8				

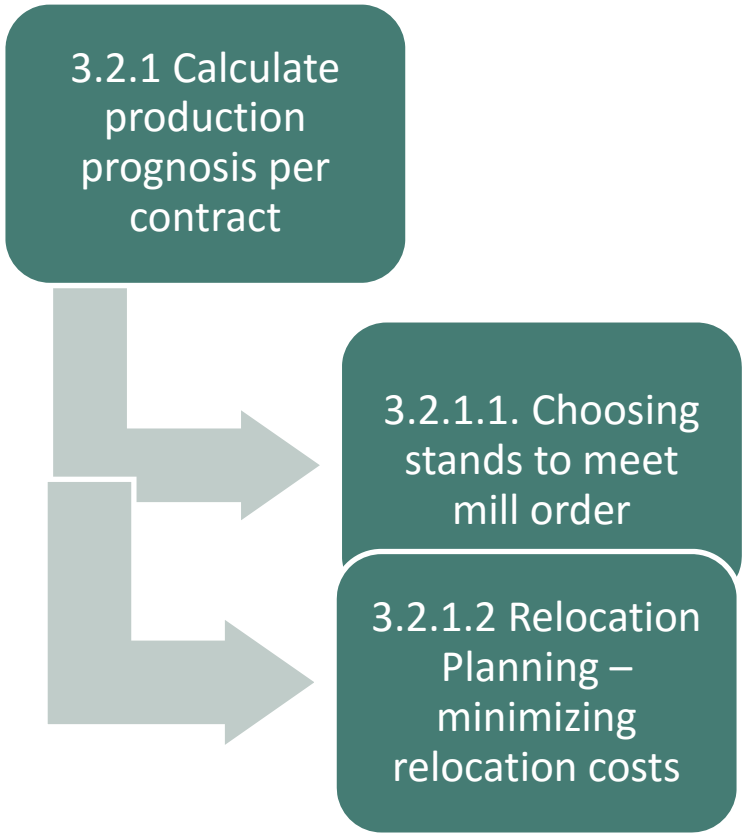
Maximize delivery precision

Minimize relocation costs

Optimal solution

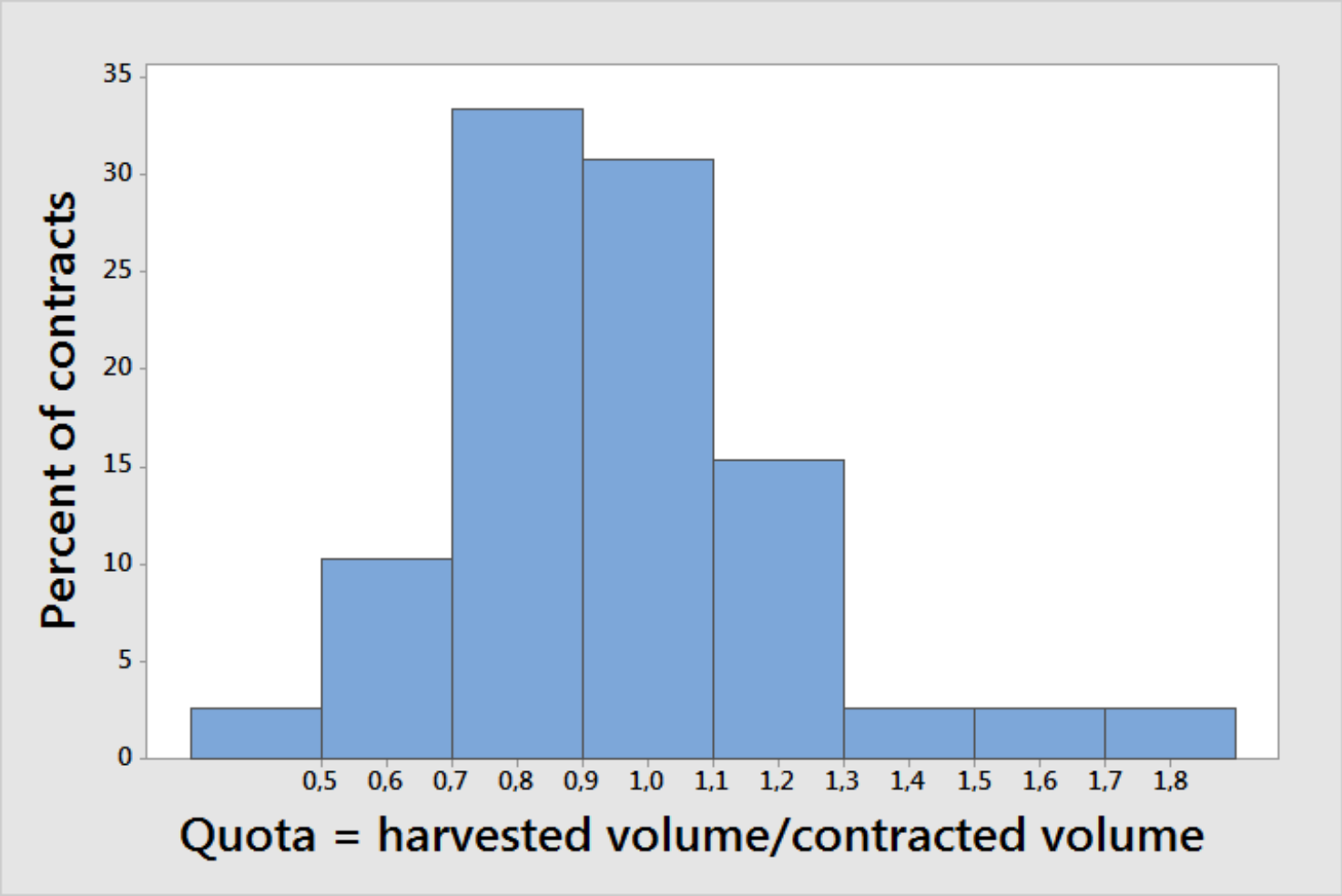
Balance between

Market orientation vs. Relocation costs vs. rutting



Bonus/penalty	
Delivery bonus	15-25 ZAR/m3
Relocation costs	10-15 ZAR/m3
Rut repair costs	< 10 ZAR/m3

Precision of production planning data – contracted vs actual harvested volume



Conclusion

- Better prognosis
  - Volume/assortment
  - Machine time/stand
  - Bearing capacity
- Communication between production manager and forest owner
  - Flexibility in choosing contracts
- Communication between production manager and logging company
  - Always something that comes up
    - Need to replan