



**School of Oriental
& African Studies**

Conceptualising seasonal financial market failures in rural household models

Andrew Dorward

8th July 2009, IDS

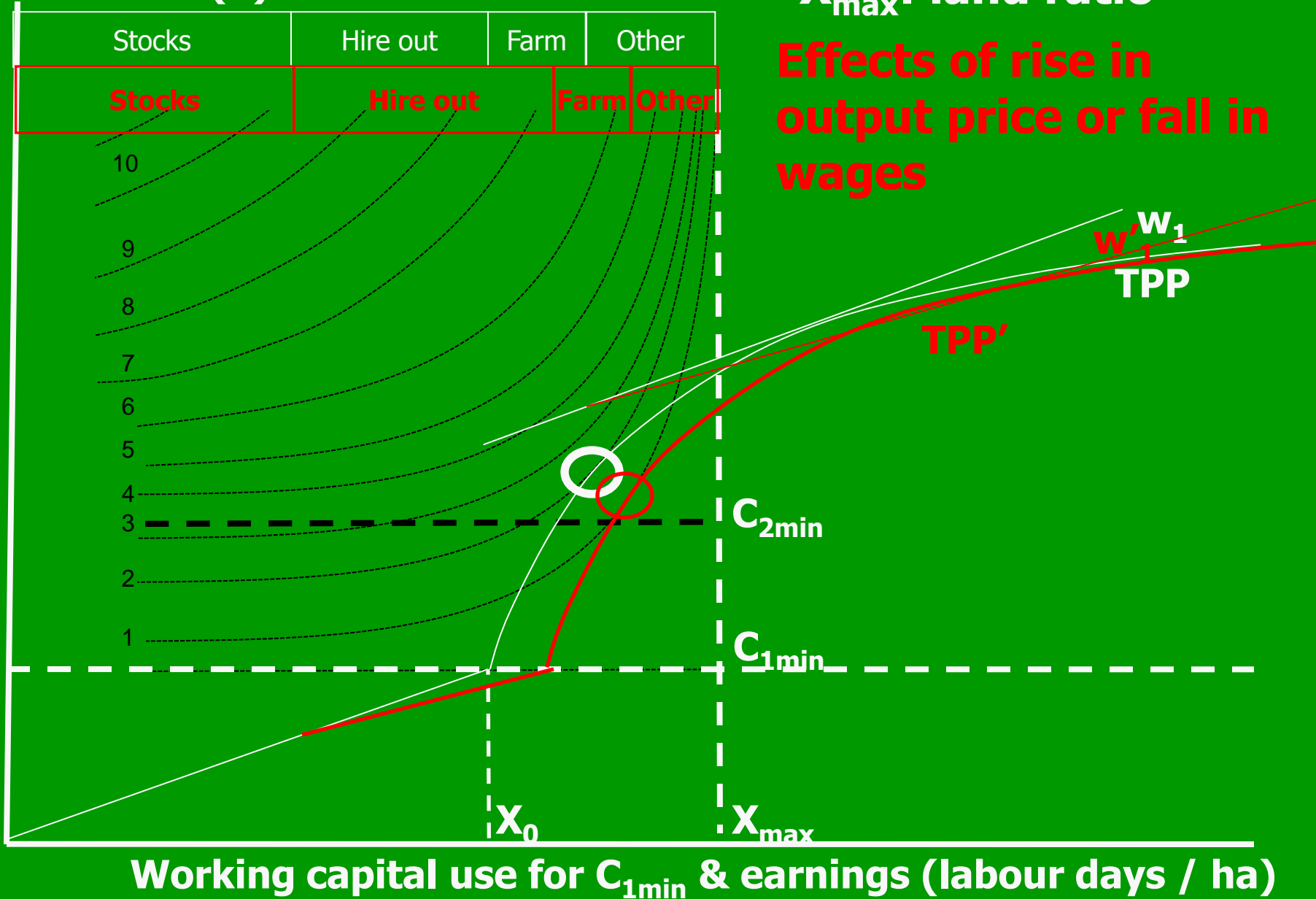
Household types

		Ratio of consumption requirements (C_{1min}) to working capital (X_{max}) C:X ratio	
		High (high dependency)	Low (low dependency)
Ratio of working capital (X_{max}) to land X:land ratio	Low (more land)	A	D
	High (less land)	B	C

Consumption (C_1)
& production (Y)

A: High $C:X_{\max}$ ratio Low
 X_{\max} : land ratio

Effects of rise in
output price or fall in
wages

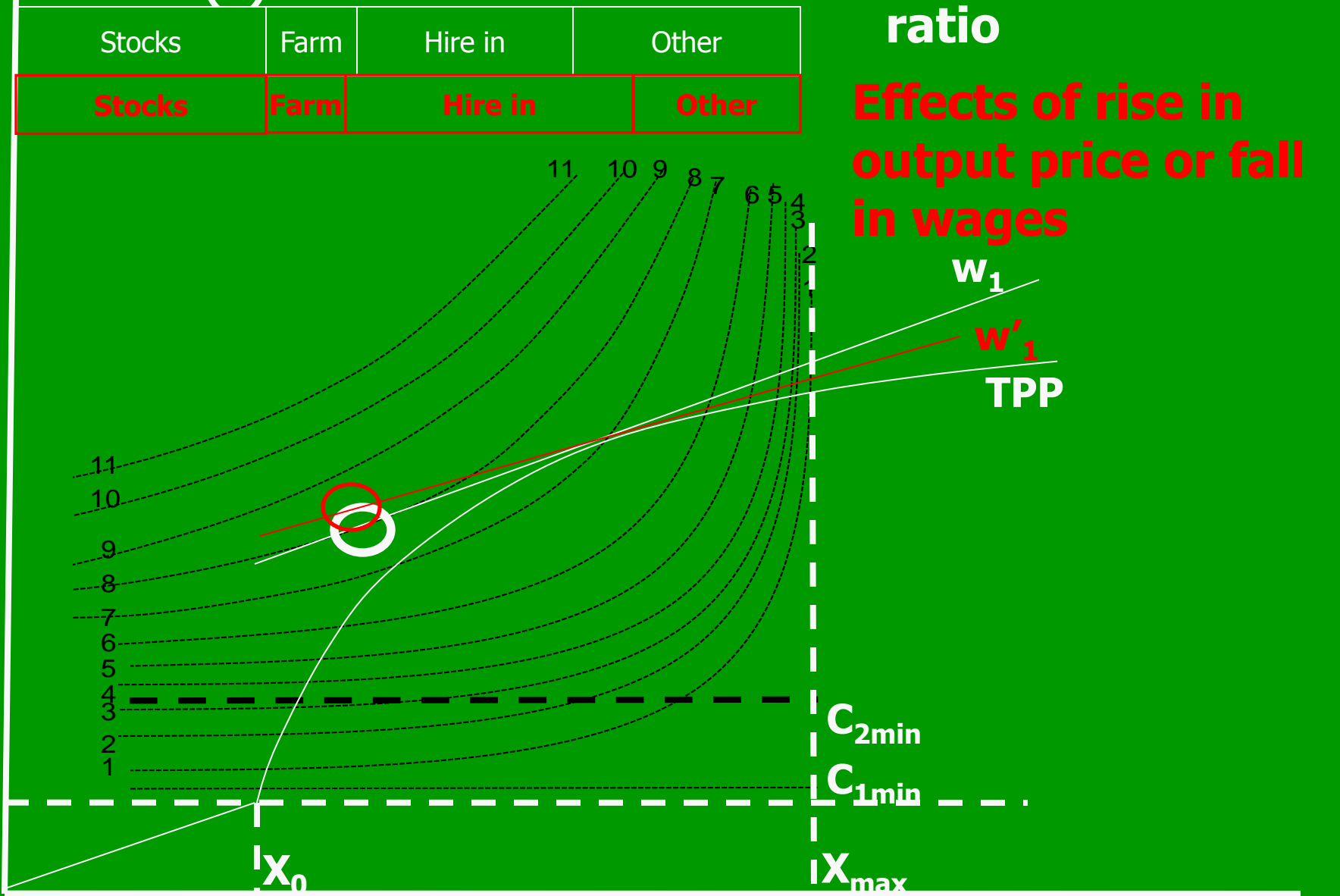


Working capital use for $C_{1\min}$ & earnings (labour days / ha)

Consumption (C_1)
& production (Y)

D: Low $C:X_{max}$ ratio
Low X_{max} : land
ratio

Effects of rise in
output price or fall
in wages



Working capital use for C_{1min} & earnings (labour days / ha)

Farm /hh type	C:X ratio	X:land ratio	Price increase/ wage fall effects			
			Labour Hire		Production	Welfare
			In	Out		
A	High	Low	N/A	+	-	-
B	High	High	N/A	+	-	-
C	Low	High	+	N/A	+	+
D	Low	Low	+	N/A	+	+



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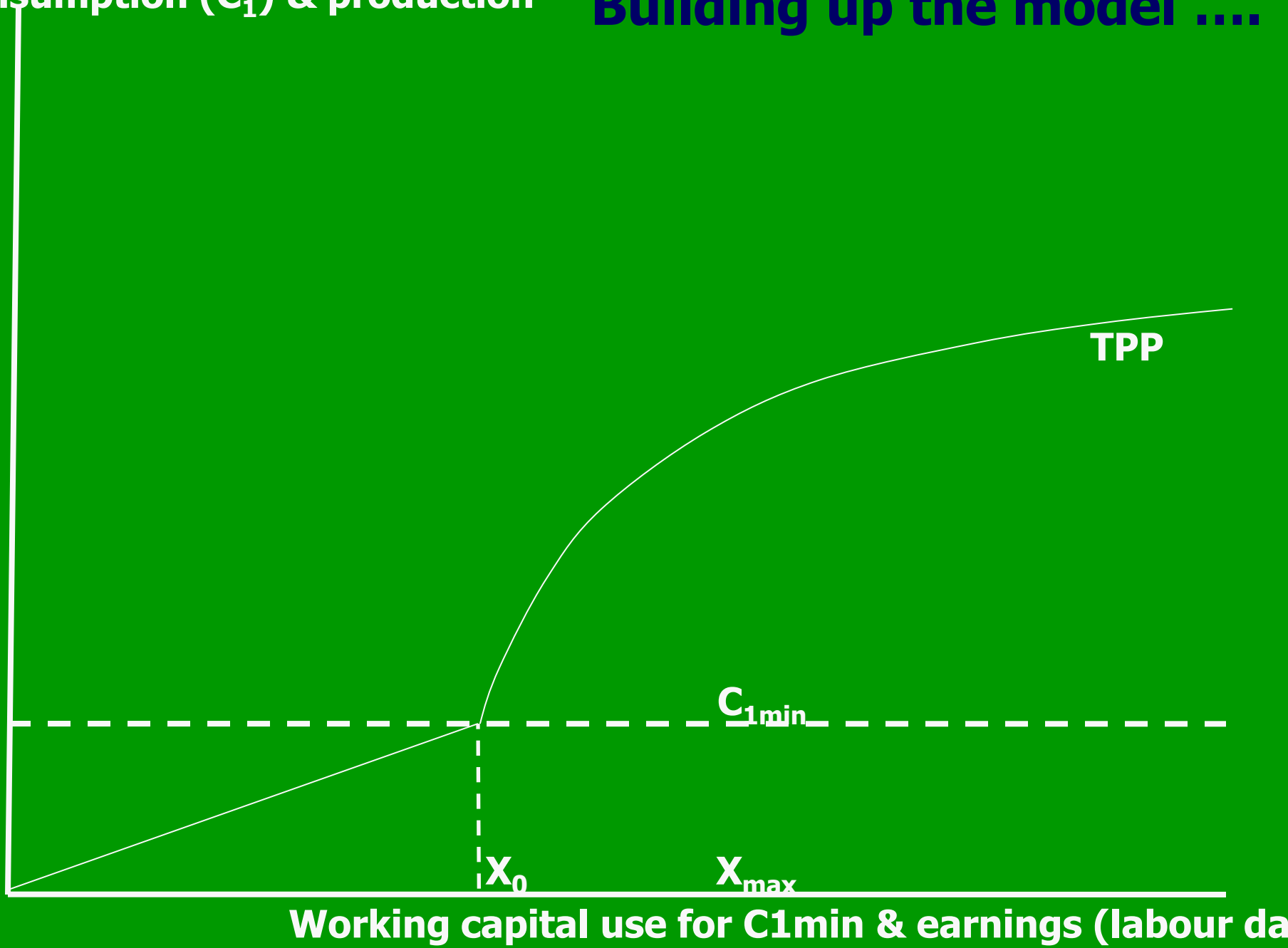
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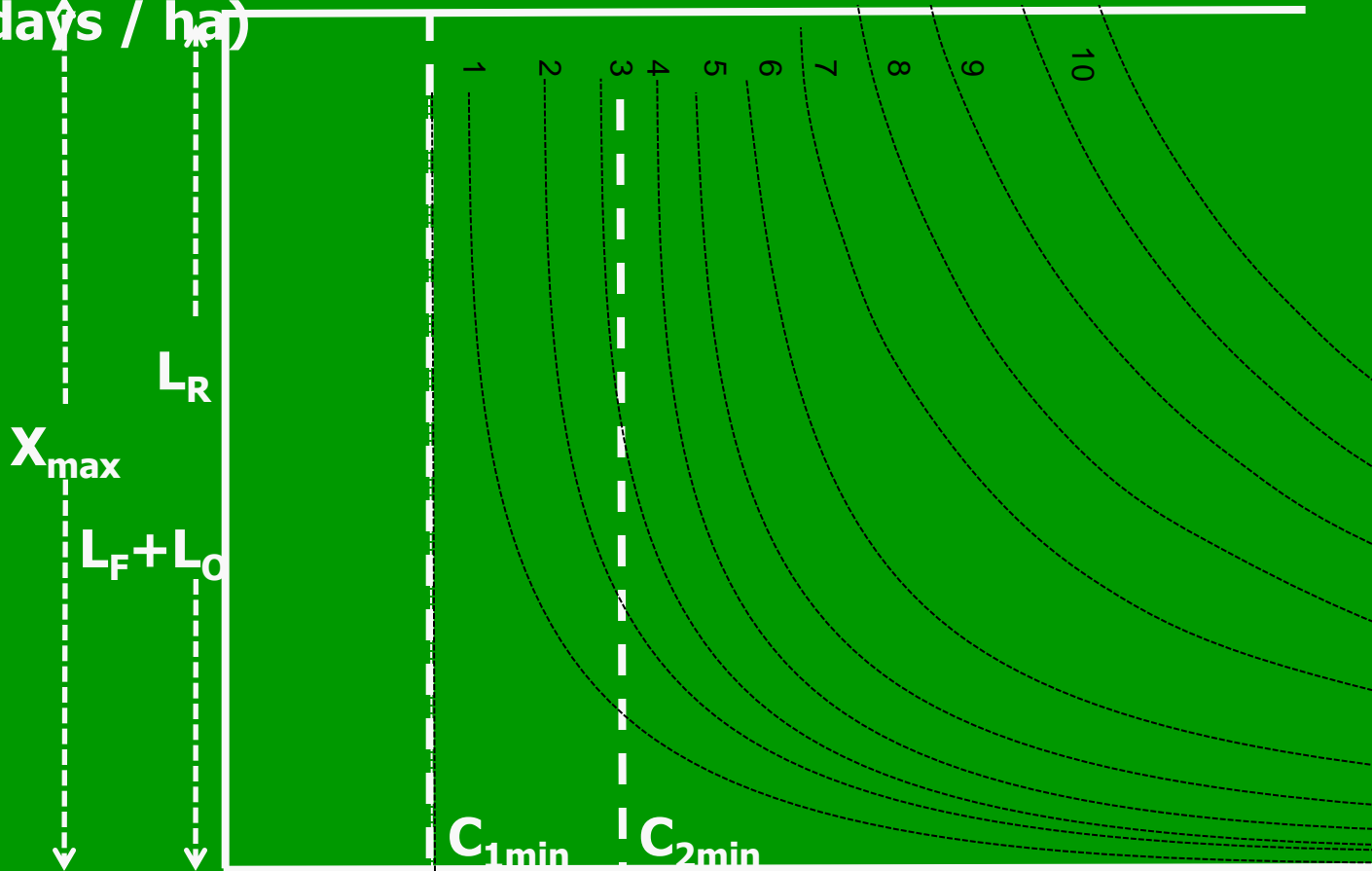
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Building up the model

Consumption (C_1) & production
(Y)

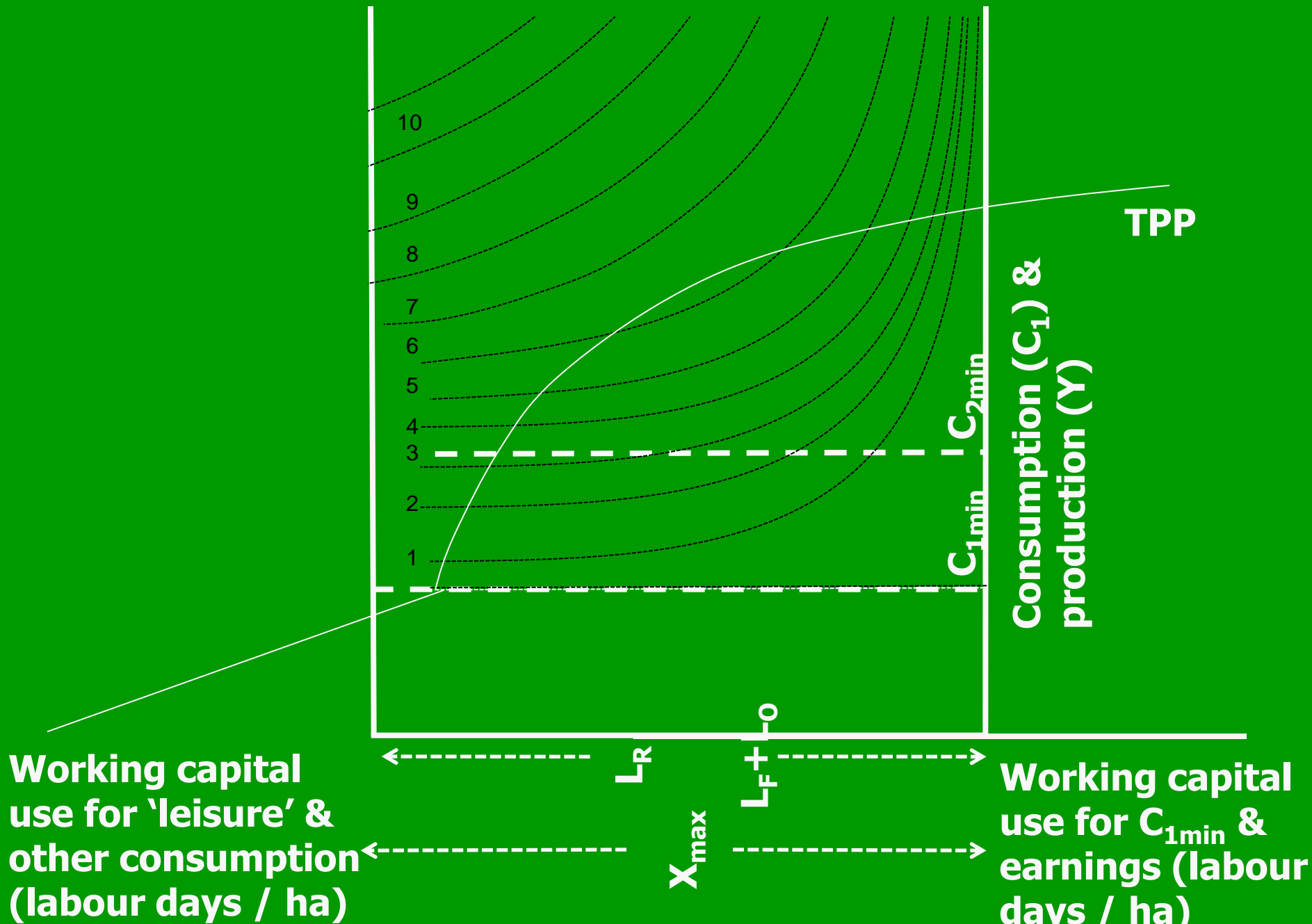


**Working capital
use for 'leisure' &
other consumption
(labour days / ha)**



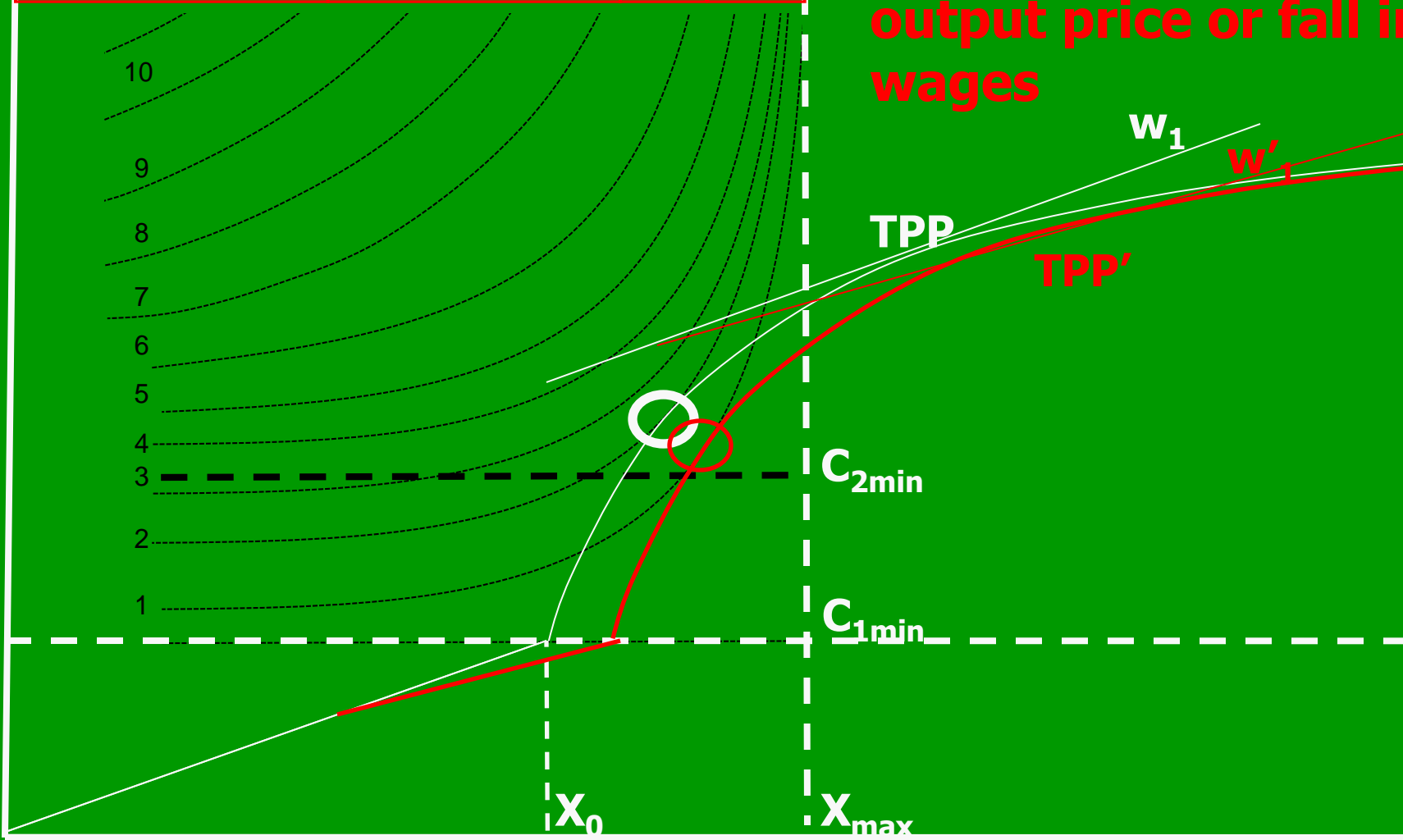
**Working capital
use for C_{1min} &
earnings (labour
days / ha)**

**Consumption (C_1) &
production (Y)**



Consumption (C_1) & production
(Y)

Stocks	Hire out	Farm	Other
Stocks	Hire out	Farm	Other



A: High $C:X_{max}$ ratio
Low X_{max} : land ratio
ratio

Effects of rise in output price or fall in wages

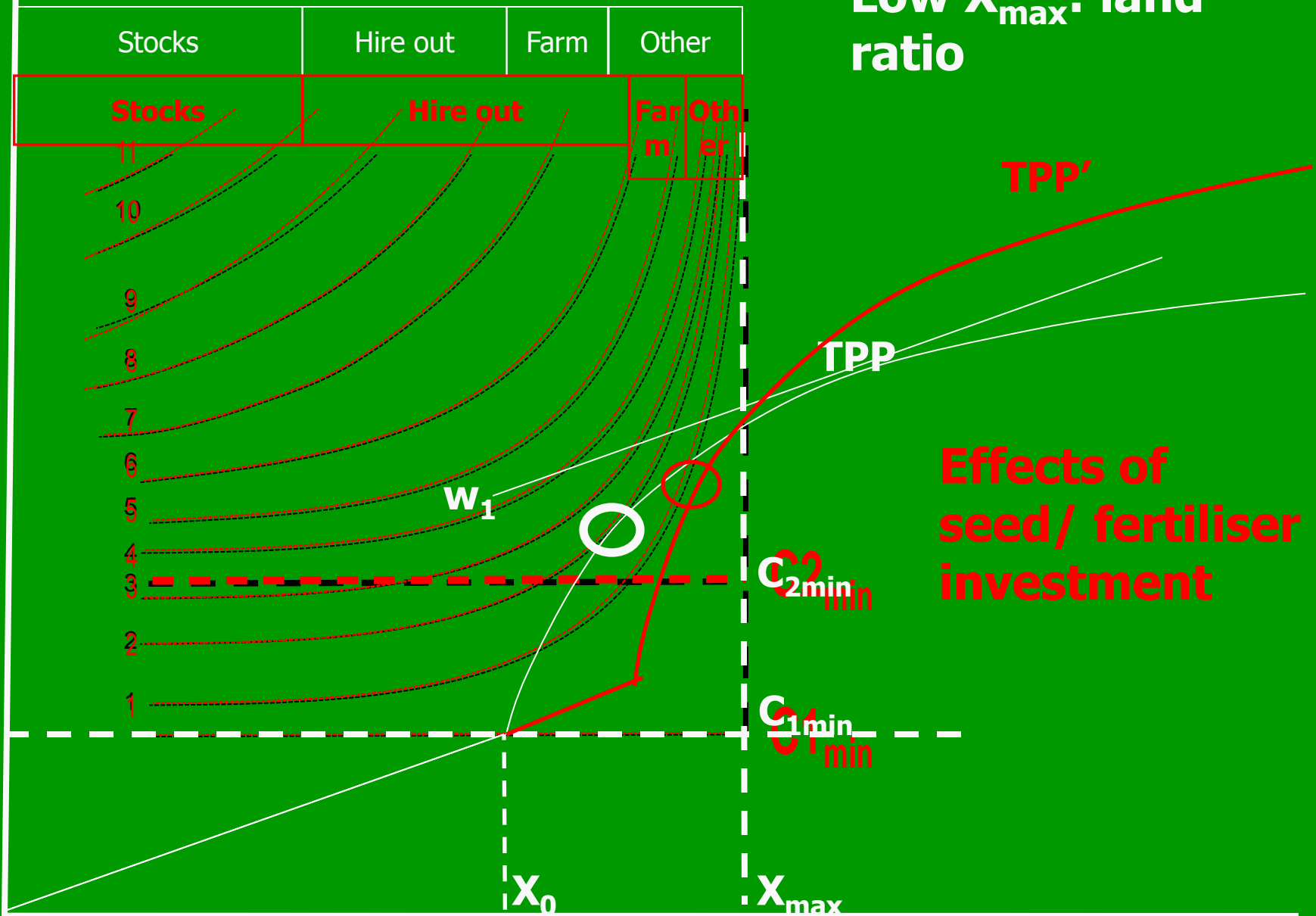
Working capital use for C_{1min} & earnings (labour da)

Examining fertiliser/seed technology impacts without & with a subsidy

- ❑ Up front investment in inputs additional to labour increases effective minimum seasonal capital $C_{1\min}$.
- ❑ Importance of this varies between different households
- ❑ Subsidy reduces up front investment requirements and increases profitability, different impacts / opportunities on different households
- ❑ These feed into subsequent year stocks, and their output and wage prices

Consumption (C_1) & production (Y)

A: High $C_1:X_{max}$ ratio
Low X_{max} : land ratio

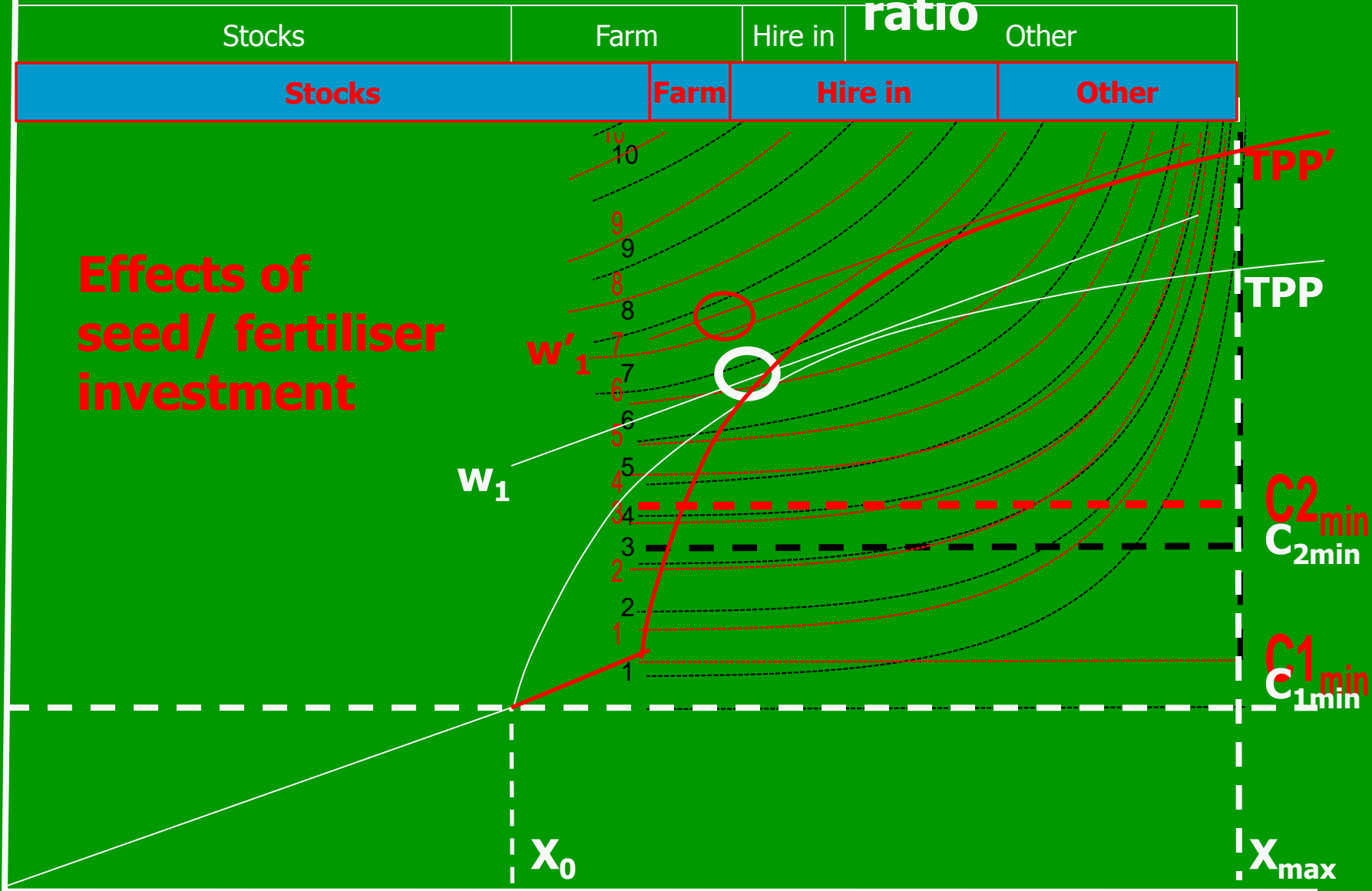


Effects of seed / fertiliser investment

Working capital use for C_{1min} & earnings (labour days / ha)

Consumption (C_1) & production (Y)

C: Low $C:X_{\max}$ ratio
High X_{\max} : land ratio

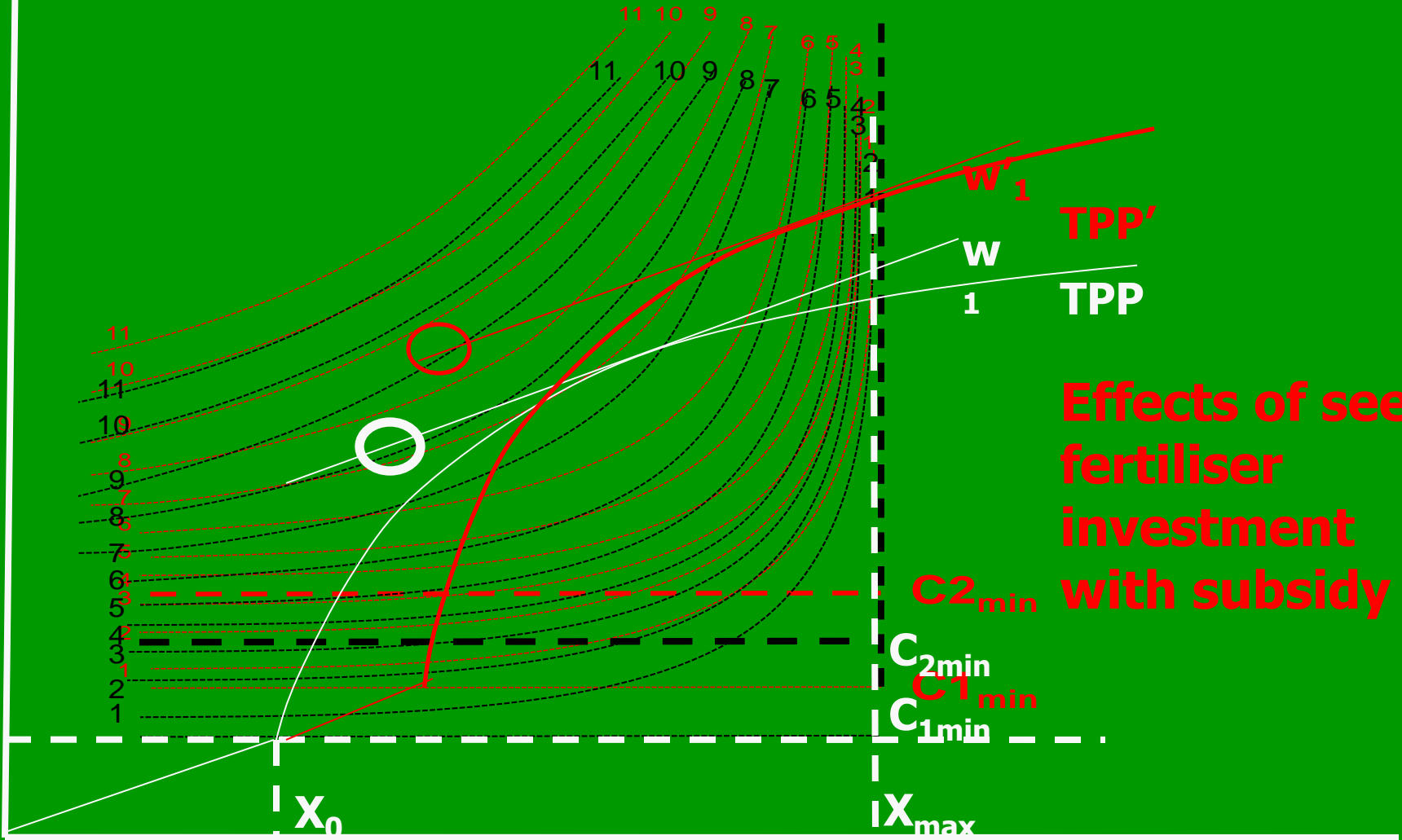


Working capital use for C_{1min} & earnings (labour days / ha)

Consumption (C_1) & production (Y)

D: Low $C_1:X_{\max}$ ratio
Low X_{\max} : land ratio
ratio

Stocks	Farm	Hire in	Other
Stocks		Fa rm	Hire in
Stocks		Hire in	Other

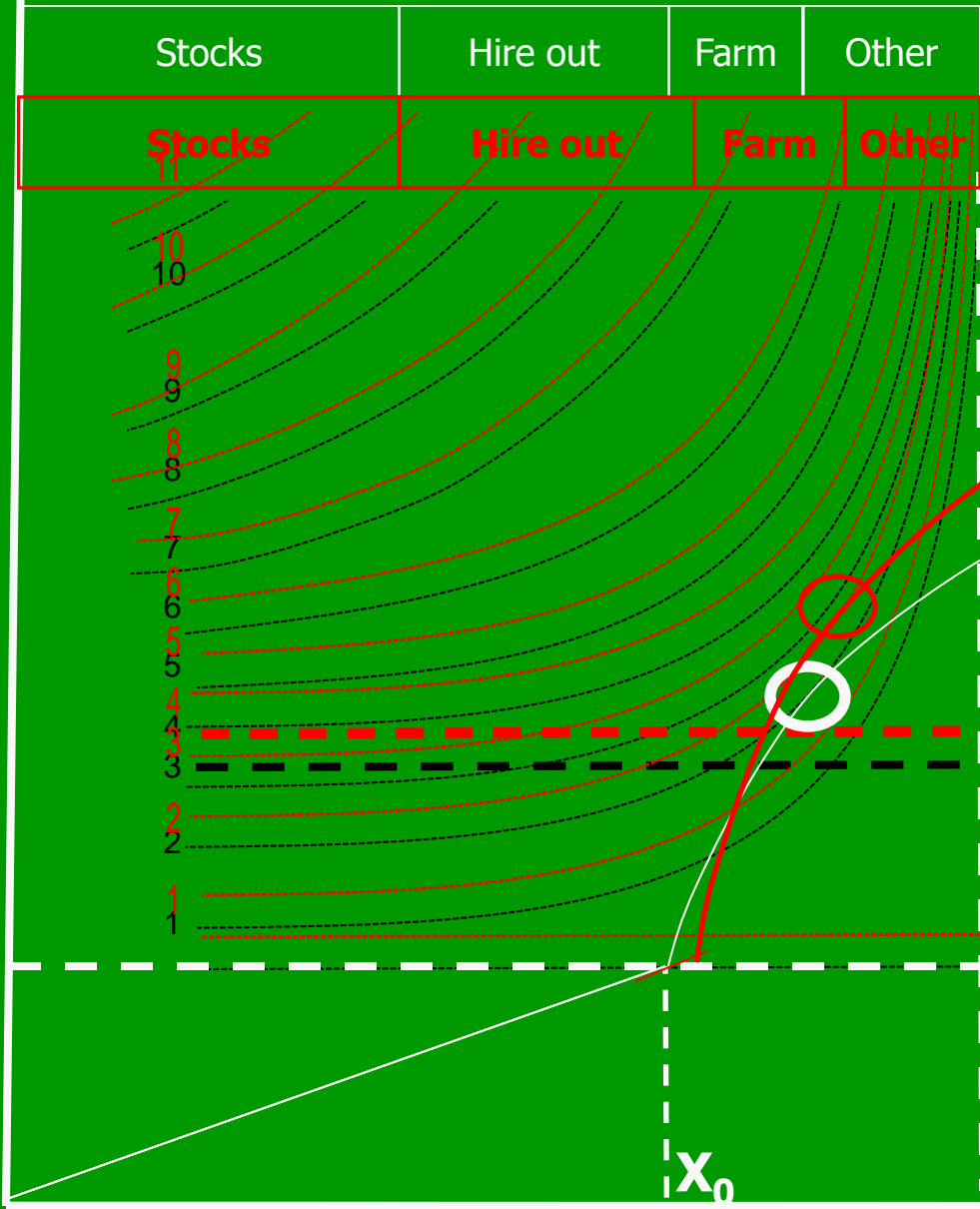


Effects of seed / fertiliser investment with subsidy

Working capital use for C_{1min} & earnings (labour days / ha)

Consumption (C_1) & production (Y)

A: High $C:X_{max}$ ratio
Low X_{max} : land ratio

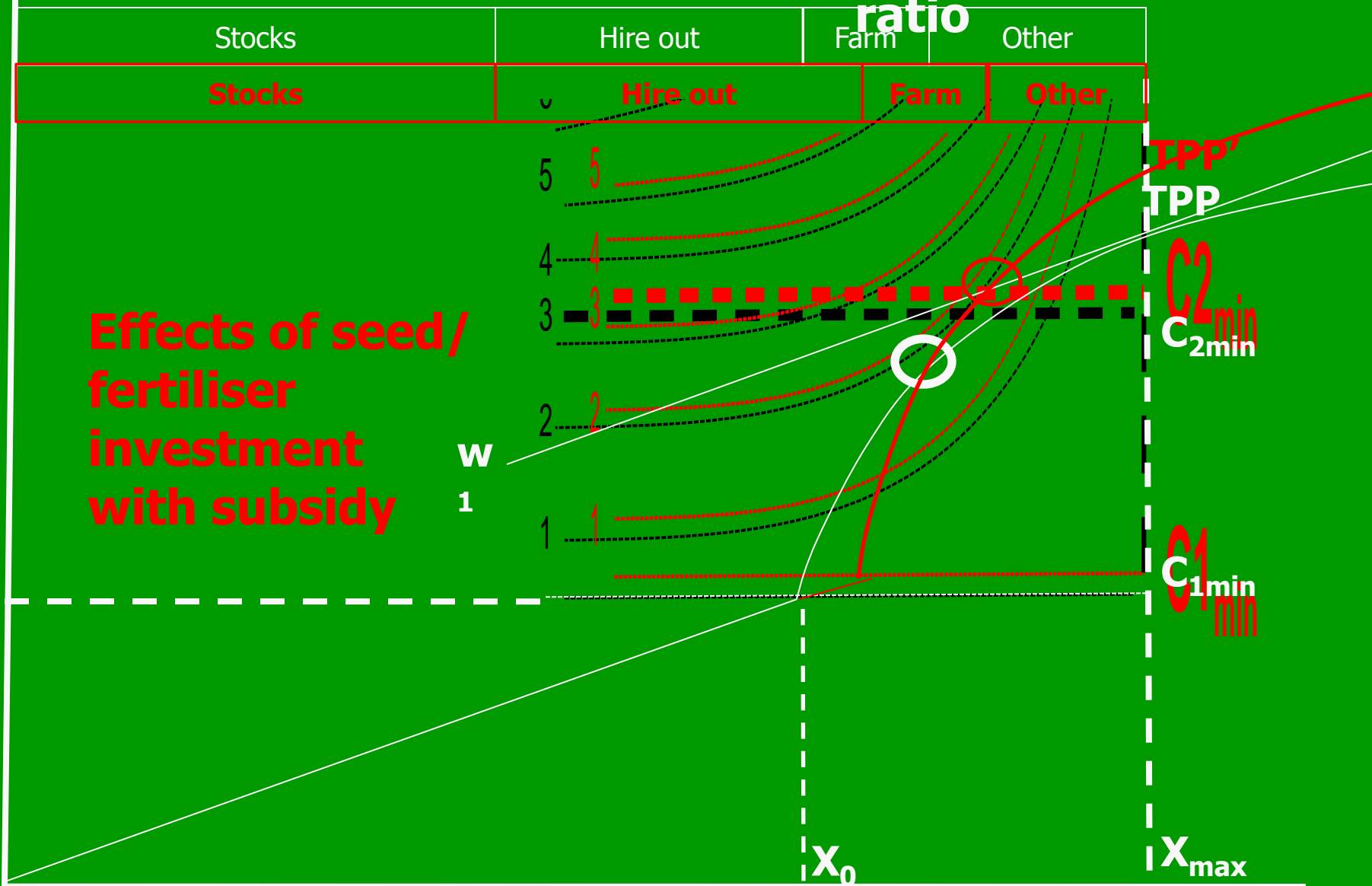


**Effects of seed/
 fertiliser
 investment
 with subsidy**

Working capital use for C_{1min} & earnings (labour da

Consumption (C_1) & production (Y)

B: High $C:X_{max}$ ratio
High X_{max} : land ratio

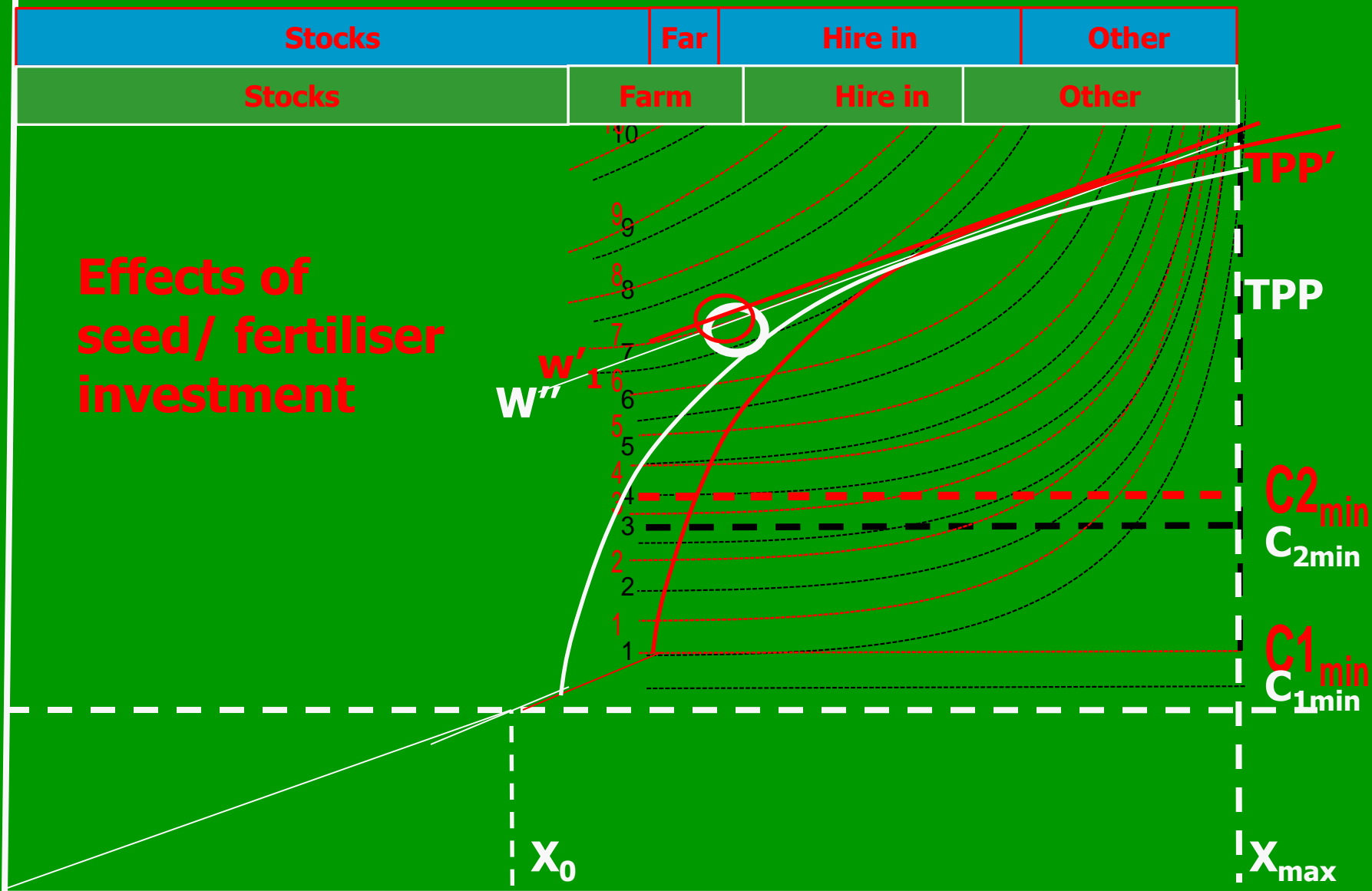


**Effects of seed/
 fertiliser
 investment
 with subsidy**

Working capital use for C_{1min} & earnings (labour da

Consumption (C_1) & production (Y)

C: Low $C:X_{max}$ ratio High
 X_{max} : land ratio

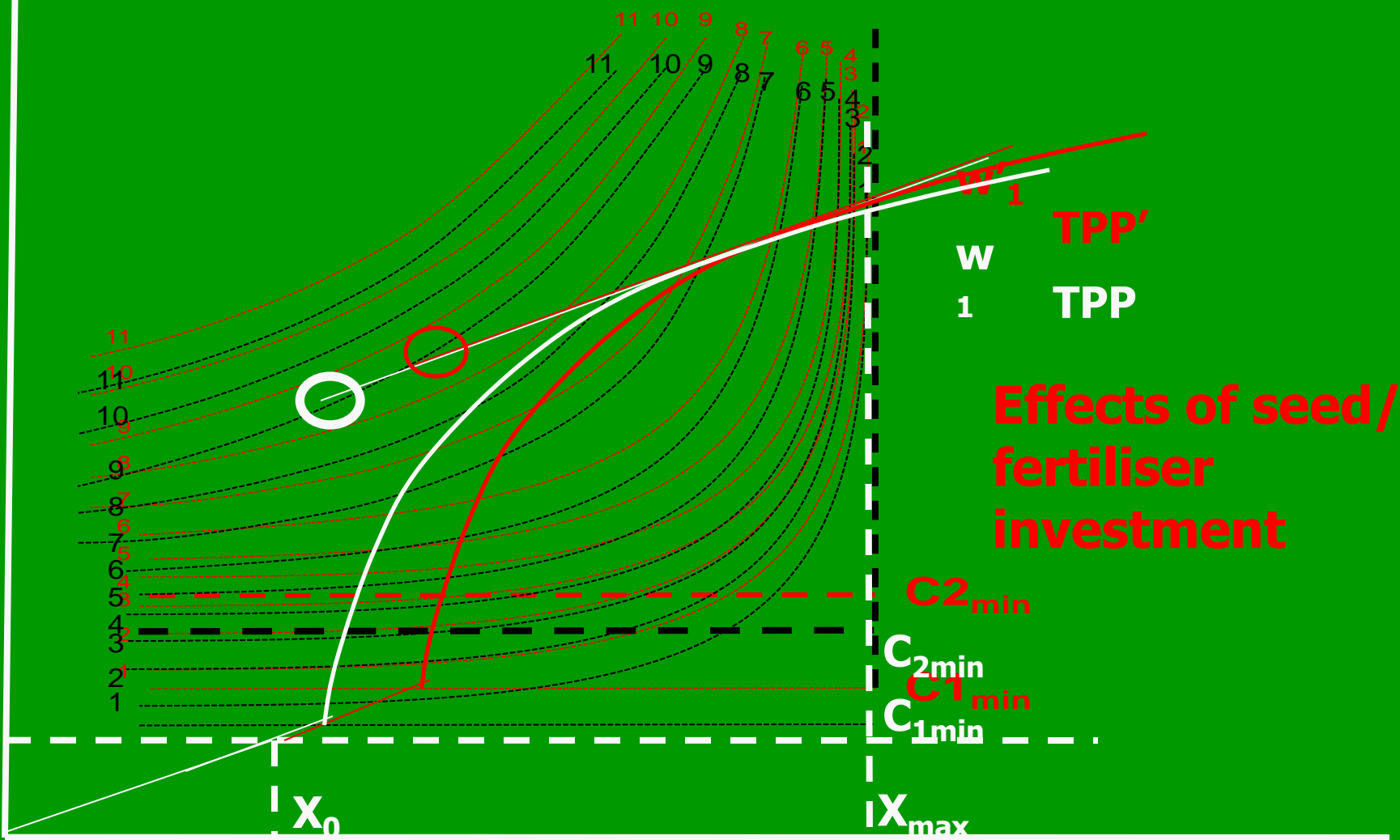


Working capital use for $C1_{min}$ & earnings (labour days / ha)

Consumption (C_1) & production (Y)

D: Low $C_1:X_{max}$ ratio
Low X_{max} : land ratio

Stocks		Fa rm	Hire in		Other
Stocks	Fa rm	Hire in		Other	



Working capital use for C_{1min} & earnings (labour da)

Farm/ hh type	C:X ratio	X:land ratio	seed/ fertiliser investment technology no subsidy			
			Labour Hire		Production	Welfare
			In	Out		
A	High	Low	N/A	N/A	N/A	-
B	High	High	N/A	N/A	N/A	-
C	Low	High	+	N/A	+	+
D	Low	Low	+	N/A	+	+

Farm/ hh type	C:X ratio	X:land ratio	seed/ fertiliser investment technology with subsidy 1 st season c/f no subsidy			
			Labour Hire		Production	Welfare
			In	Out		
A	High	Low	N/A	+	++	+/=
B	High	High	N/A	+	++	+/=
C	Low	High	-	N/A	+	+
D	Low	Low	+	N/A	+	+
Subsequent season: lower output price, higher wages,						

Farm /hh type	C:X ratio	X:land ratio	Price fall/ wage increase effects			
			Labour Hire		Production	Welfare
			In	Out		
A	High	Low	N/A	-	+	+
B	High	High	N/A	-	+	+
C	Low	High	-	N/A	-	-
D	Low	Low	-	N/A	-	-