INSTITUTE FOR THE DEVELOPMENT OF ENVIRONMENTAL-ECONOMIC ACCOUNTING

System of Environmental-Economic Accounts (SEEA) Land Accounts: Group Exercise

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Land Accounts

- SEEA Central Framework (SEEA CF)
  - What is the current stock of land?
  - What is the land used for?
- How is land use changing?
  - Drivers of land changes
  - Economic, urban development, forestry, agriculture

Ecosystem Accounts

SEEA Experimental Ecosystem Accounting (SEEA EEA)

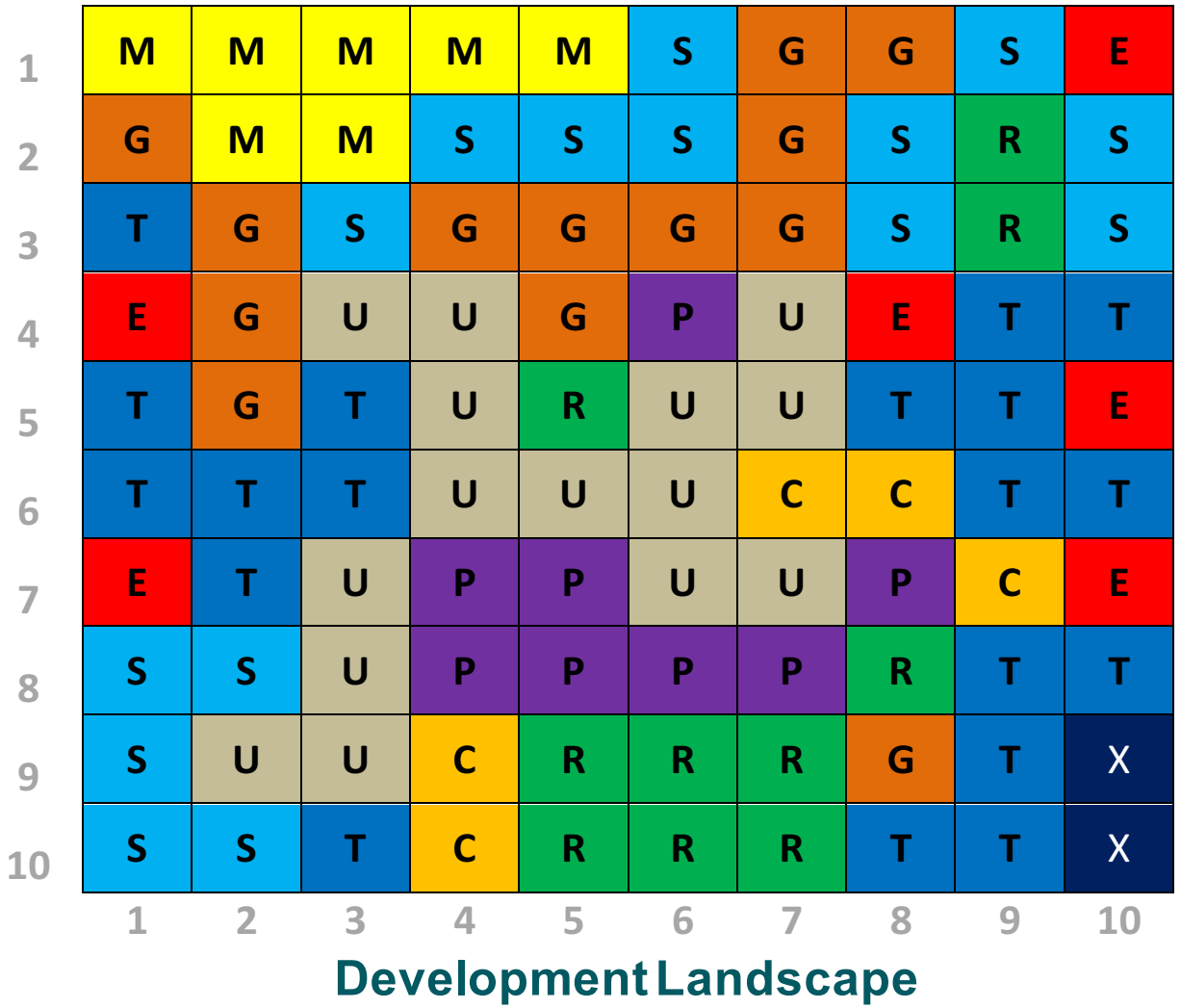
- Ecosystem assets
  - Functional ecological units
  - Flora and fauna
  - Rare and threatened species (NBSAPs)
  - Ecosystem function
  - Water filtration, sequestration, habitat, etc.

Commonalities

Location

- Where are the land and ecosystems located?
- Who has access?
- How is the land being used?
- What benefits are they providing?
- What condition are they in?

Exercise: Introduction



Opening Land Cover	Code
Urban/ Industrial	U
Crops	C
Grassland	G
Tree covered area	T
Mangroves	M
Shrub covered area	S
Regularly flooded areas	R
Sparse natural vegetated areas	P
Terrestrial barren land	E
Permanent snow, glaciers & inland water bodies	X

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Exercise: Land Development Objective

- The development will require an area of 9 hectares of land in each ecoregion
- The development must be built on a square block only
  - (i.e. 3 x 3 contiguous blocks)
- Budget to buy the land is $10,000 – the costs for each land cover type are listed
- The development cannot remove an entire land cover type

Exercise – Development costs

Ecoregion's land cover types	Colour code	Code	Initial area (ha)	Land cost ($/
Urban/ Industrial		**U**	15	$ 1,000
Mangroves		**M**	7	$ 800
Crops		**C**	5	$ 600
Tree covered area		**T**	19	$ 300
Shrub covered area		**S**	15	$ 270
Sparse natural vegetated areas		**P**	8	$ 270
Terrestrial barren land		**E**	6	$ 250
Grassland		**G**	13	$ 210
Regularly flooded areas		**R**	10	$ 100
Permanent snow, glaciers and inland water bodies		**X**	2	Not allowed
Total			**100**	

Development Costs

EcoRegion1

Opening Land Cover	Code	Area Used	Cost	Cost/ha
Urban/ Industrial	U		-	$ 1,000
Crops	C		-	$ 600
Grassland	G		-	$ 210
Tree covered area	T	2	600	$ 300
Mangroves	M		-	$ 800
Shrub covered area	S	4	1,080	$ 270
Regularly flooded areas	R	2	200	$ 100
Sparse natural vegetated areas	P		-	$ 270
Terrestrial barren land	E	1	250	$ 250
Permanent snow, glaciers & inland water bodies	X		na	na
Total Cost of Land		**9**	**2,130**	
Budget			10,000	
Budget surplus/overrun			**7,870**	

Area Developed

Cost

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Land Accounts

EcoRegion1

SEEA CF Land Extent Account (ha)

	Urban/ Industrial	Crops	Grassland	Tree covered area	Mangroves	Shrub covered area	Regularly flooded areas	Sparse natural vegetated areas	Terrestrial barren land	Permanent snow, glaciers & inland water bodies	Total
Opening Stock	**15**	**5**	**13**	**19**	**7**	**15**	**10**	**8**	**6**	**2**	**100**
Additions due to development:											
Managed Expansion	9										9
Natural Expansion											
Upward reappraisals											
Total additions to stock											
Reductions due to development:											
Managed Reduction				-2		-4	-2		-1		-9
Natural Reduction											
Upward reappraisals											
Total reductions to stock											
Net change in stock	9			-2		-4	-2		-1		
Closing balance	**24**	**5**	**13**	**17**	**7**	**11**	**8**	**8**	**5**	**2**	**100**

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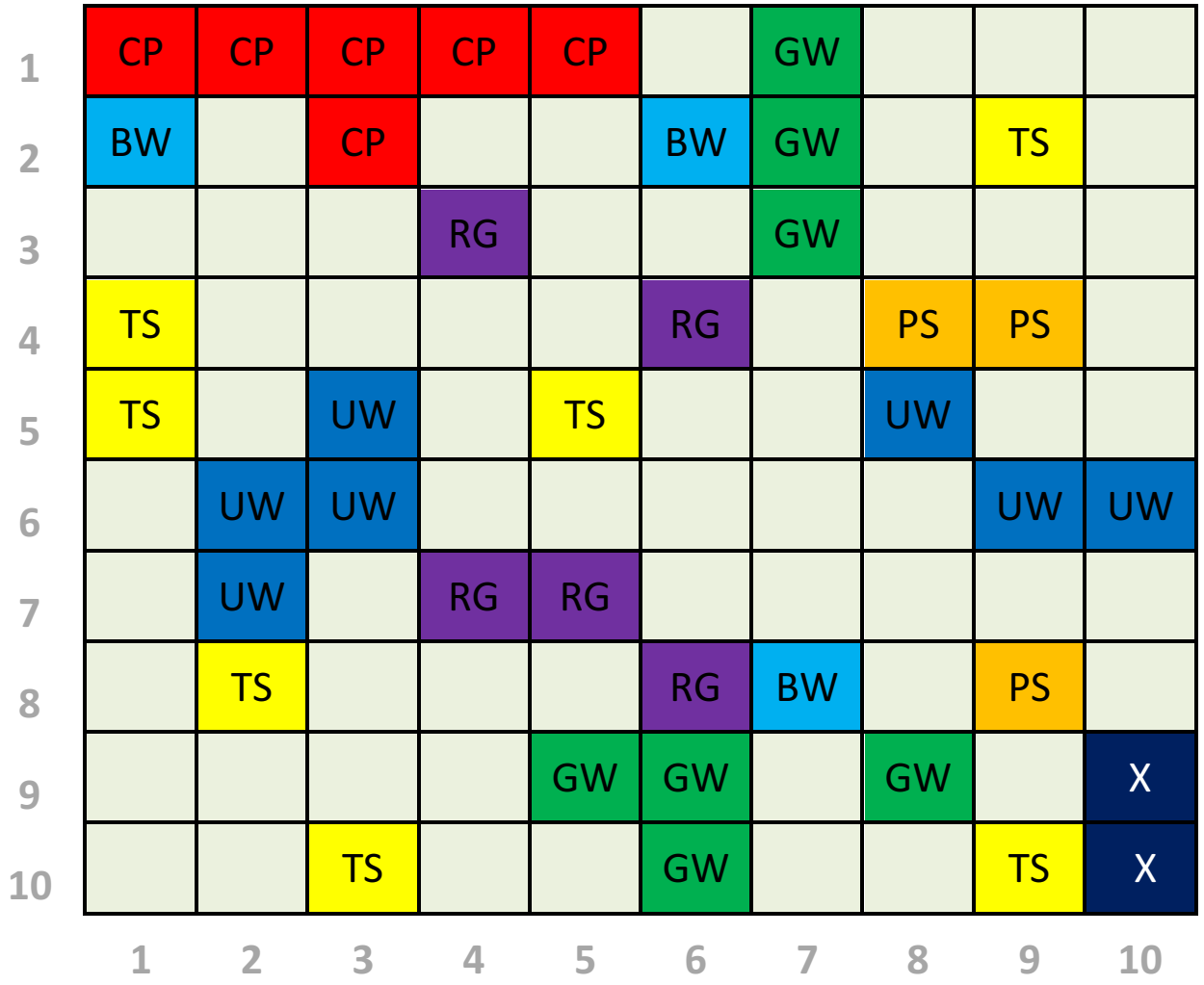
Exercise – Ecosystem Protection



Ecosystem assets/services	Code
Urban Water Catchment	UW
Threatened Species	TS
Bird Watchers Paradise	BW
Ground water recharge area	GW
Pollination Serivces	PS
Rare Grasses	RG
Coastal Protection	CP

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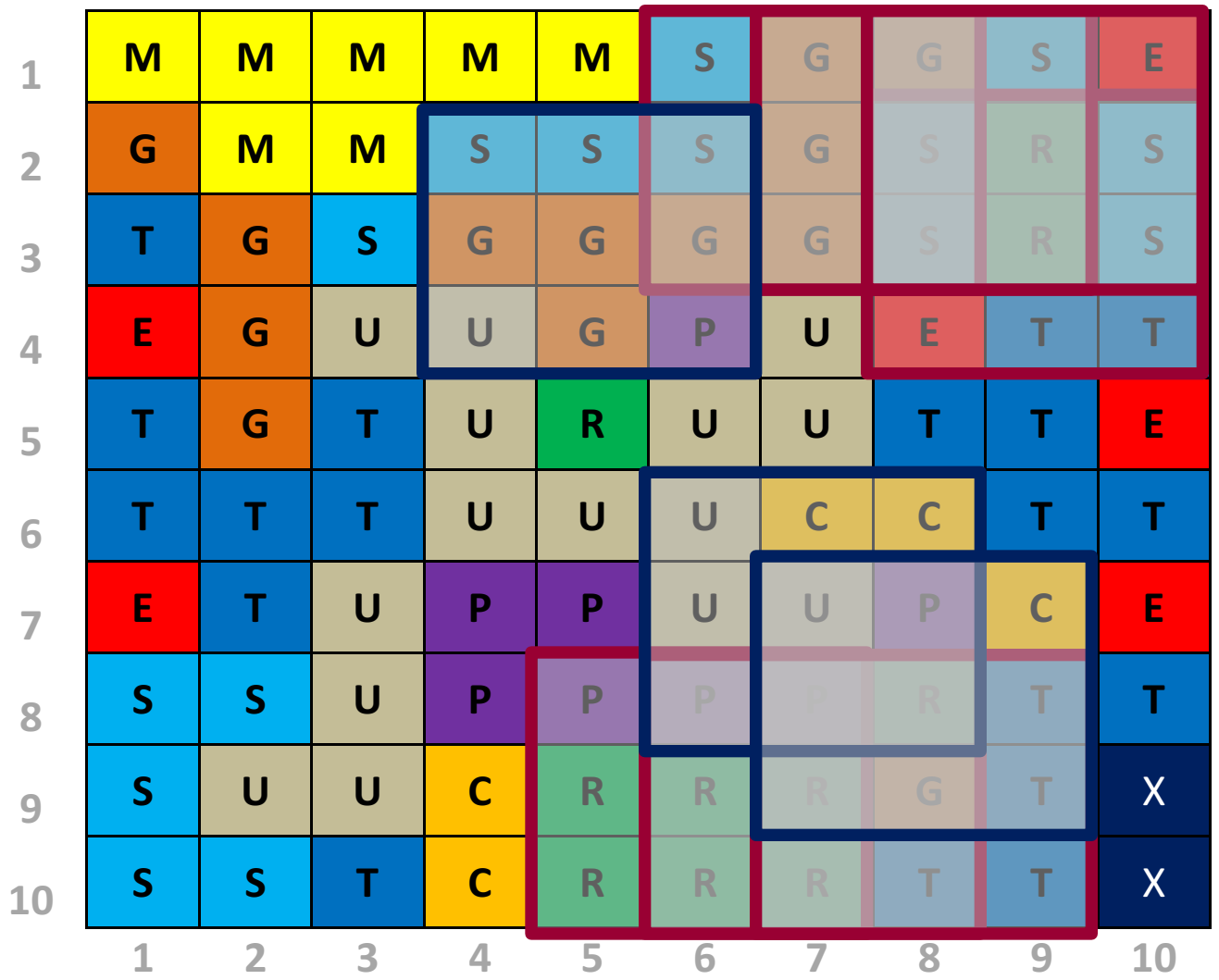
Exercise – Comments

- Land and ecosystem accounts indicate what has changed
- Biodiversity finance (restoration or replacement costs) linked to changes
- *Integrating accounting and biodiversity finance provides a complete picture*

Solutions for regional development game



Least cost land areas for Round 1

Areas within budget for Round 2

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Thank You

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SEEA Central Framework
http://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf

SEEA Experimental Ecosystem Accounting
http://unstats.un.org/unsd/envaccounting/seeaRev/eea_final_en.pdf